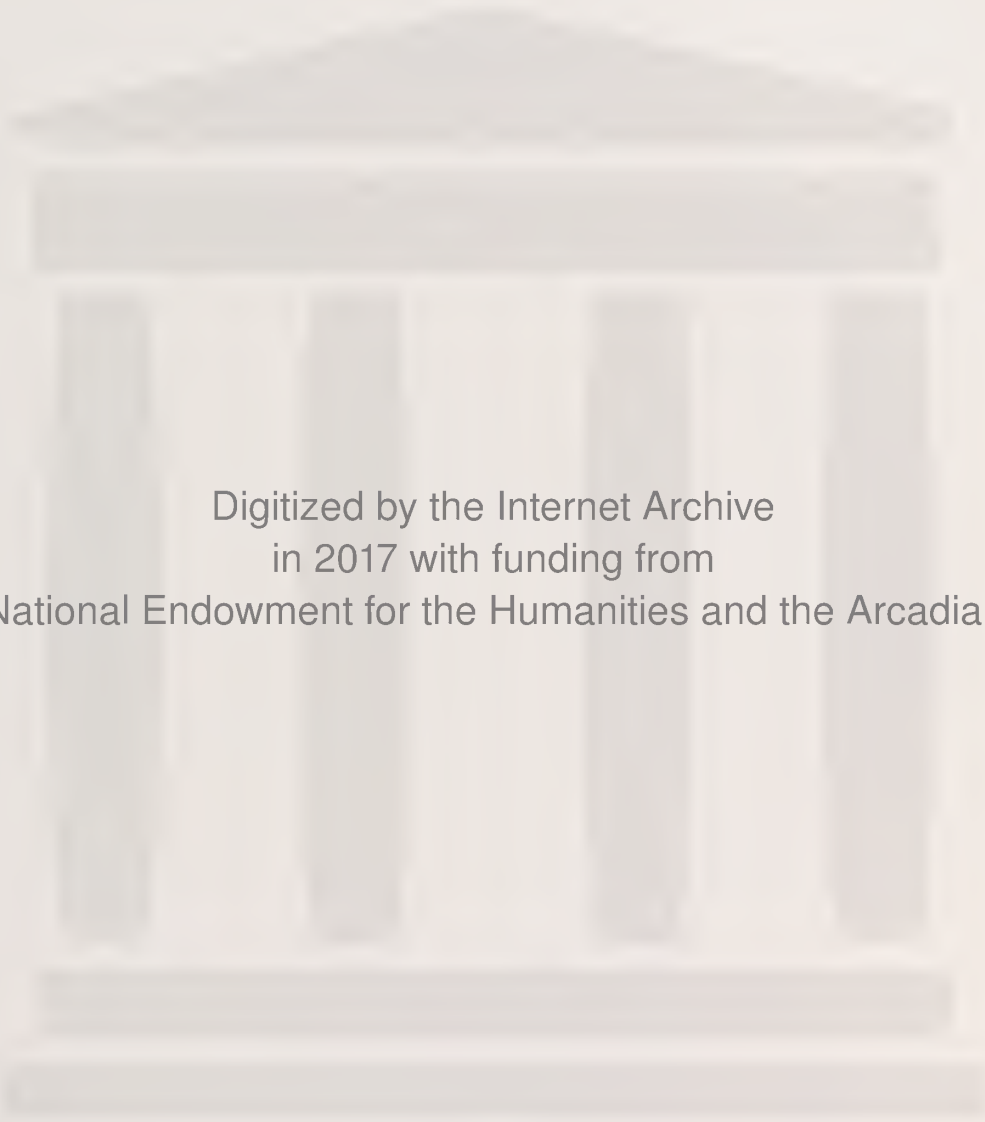


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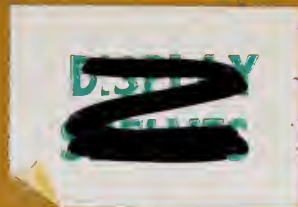
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1968

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VOLUME XXXVII • NUMBER 1

Amebic Abscess of Liver

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AND LT. COL. H. W. BOYCE

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Holt-Oram Syndrome

CAPT. H. H. SHIVELY, AND MAJOR J. W.
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(Complete Index on page 5)

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ARMY MEDICAL CENTER
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No untoward side effects have been reported to date.

Literature on indications and dosage available on request.

References:

- (1) Siver, R. H.: CMD, 21:109, September 1954. (2) Frykman, H. H.: Minn. Med., 38:19-27, January 1955. (3) McGivney, J.: Tex. State Jour. Med., 51:16-18, January 1955. (4) Quehl, T. M.: Jour. of Florida Acad. Gen. Prac., 15:15-16, October 1965. (5) Weekes, D. J.: N.Y. State Jour. Med., 58:2672-2673, August 1958. (6) Weekes, D. J.: EENT Digest, 25:47-59, December 1963. (7) Abbott, P. L.: Jour. Oral Surg., Anes., & Hosp. Dental Serv., 310-312, July 1961. (8) Rapoport, L. and Levine, W. I.: Oral Surg., Oral Med. & Oral Path., 20:591-593, November 1965.

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Prescribing information on next page.

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DECLOMYCIN Demethylchlortetracycline should be equally or more effective therapeutically than other tetracyclines when the offending organisms are tetracycline-sensitive.

Contraindication: History of hypersensitivity to demethylchlortetracycline.

Warning—In renal impairment, usual doses may lead to excessive accumulation and liver toxicity. Under such conditions, lower than usual doses are indicated, and, if therapy is prolonged, serum level determinations may be advisable. A photodynamic reaction to natural or artificial sunlight has been observed. Small amounts of drug and short exposure may produce an exaggerated sunburn reaction which may range from erythema to severe skin manifestations. In a smaller proportion, photoallergic reactions have been reported. Patients should avoid direct exposure to sunlight and discontinue drug at the first evidence of skin discomfort. Necessary subsequent courses of treatment with tetracyclines should be carefully observed.

Precautions—Overgrowth of nonsusceptible organisms may occur. Constant observation is essential. If new infections appear, appropriate measures should be taken. In infants, increased intracranial pressure with bulging fontanels has been observed. All signs and symptoms have disappeared rapidly upon cessation of treatment.

Side Effects—Gastrointestinal system—anorexia, nausea, vomiting, diarrhea, stomatitis, glossitis, enterocolitis, pruritus ani. Skin—maculopapular and erythematous rashes. A rare case of exfoliative dermatitis has been reported. Photosensitivity; onycholysis and discoloration of the nails (rare). Kidney—rise in BUN, apparently dose related. Transient increase in urinary output, sometimes accompanied by thirst (rare). Hypersensitivity reactions—urticaria, angioneurotic edema, anaphylaxis. Teeth—dental staining (yellow-brown) in children of mothers given this drug during the latter half of pregnancy, and in children given the drug during the neonatal period, infancy and early childhood. Enamel hypoplasia has been seen in a few children. If adverse reaction or idiosyncrasy occurs discontinue medication and institute appropriate therapy.

Average Adult Daily Dosage: 150 mg q.i.d. or 300 mg b.i.d. Should be given 1 hour before or 2 hours after meals, since absorption is impaired by the concomitant administration of high calcium content drugs, foods and some dairy products. Treatment of streptococcal infections should continue for 10 days, even though symptoms have subsided.

In the treatment of syphilis a dosage schedule of a total of 12 to 18 Gm. given in equally divided doses over a period of 10 to 15 days should be followed. Close follow-up observation of the patient is recommended, including appropriate laboratory tests, since demethylchlortetracycline has not had adequate evaluation in all stages of syphilis. Spinal fluid examination should be included as part of this follow-up.

Acute gonococcal anterior urethritis in males has been treated effectively with a single dose of 600-900 mg. of DECLOMYCIN Demethylchlortetracycline. Individuals unable to tolerate large single doses due to gastrointestinal side effects may be treated with 150 mg. every 6 hours for a minimum of 4 doses or 300 mg. every 12 hours for a minimum of 2 doses. Females should be treated with a dosage of 150 mg. every 6 hours or 300 mg. every 12 hours until a cure is effected.

Primary Atypical Pneumonia (Eaton Agent): The average adult daily dosage is 900 mg. in 3 divided doses for six days.

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Indications: Hypothyroid conditions. **Contraindications:** Thyrotoxicosis, acute myocardial infarctions unless associated with hypothyroidism. In hypothyroidism with hypoadrenalism coadministration of corticoids with LETTER[®] is recommended. **Precautions and Side Effects:** Excessive dosage may result in diarrhea, cramps, palpitation, nervousness, rapid pulse, sweating. If symptoms appear, discontinue medication for several days, then reinstitute at a lower level. Since myxedema patients with heart disease may suffer seriously from abrupt increases in dosage, caution should be exercised in adjusting dosage. **Dosage:** Generally, the initial adult dosage is 0.1 mg. daily. This may be increased in small increments every one to three weeks until proper metabolic balance is achieved. **Available:** Bottles of 100 tablets, in six potencies: 0.025 mg. (violet), 0.05 mg. (peach), 0.1 mg. (pink), 0.2 mg. (green), 0.3 mg. (yellow), and 0.5 mg. (white).



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Dextromethorphan hydrobromide	30 mg.
Terpin hydrate	180 mg.
Acetaminophen	325 mg.

Dosage: Adults—1 tablet, swallowed whole to preserve timed-release feature, in morning, midafternoon and at bedtime. **Side effects:** Occasional drowsiness, blurred vision, cardiac palpitations, flushing, dizziness, nervousness or gastrointestinal upsets. **Precautions:** The patient should be advised not to drive a car or operate dangerous machinery if drowsiness occurs. Use with caution in patients with hypertension, heart disease, diabetes or thyrotoxicosis.

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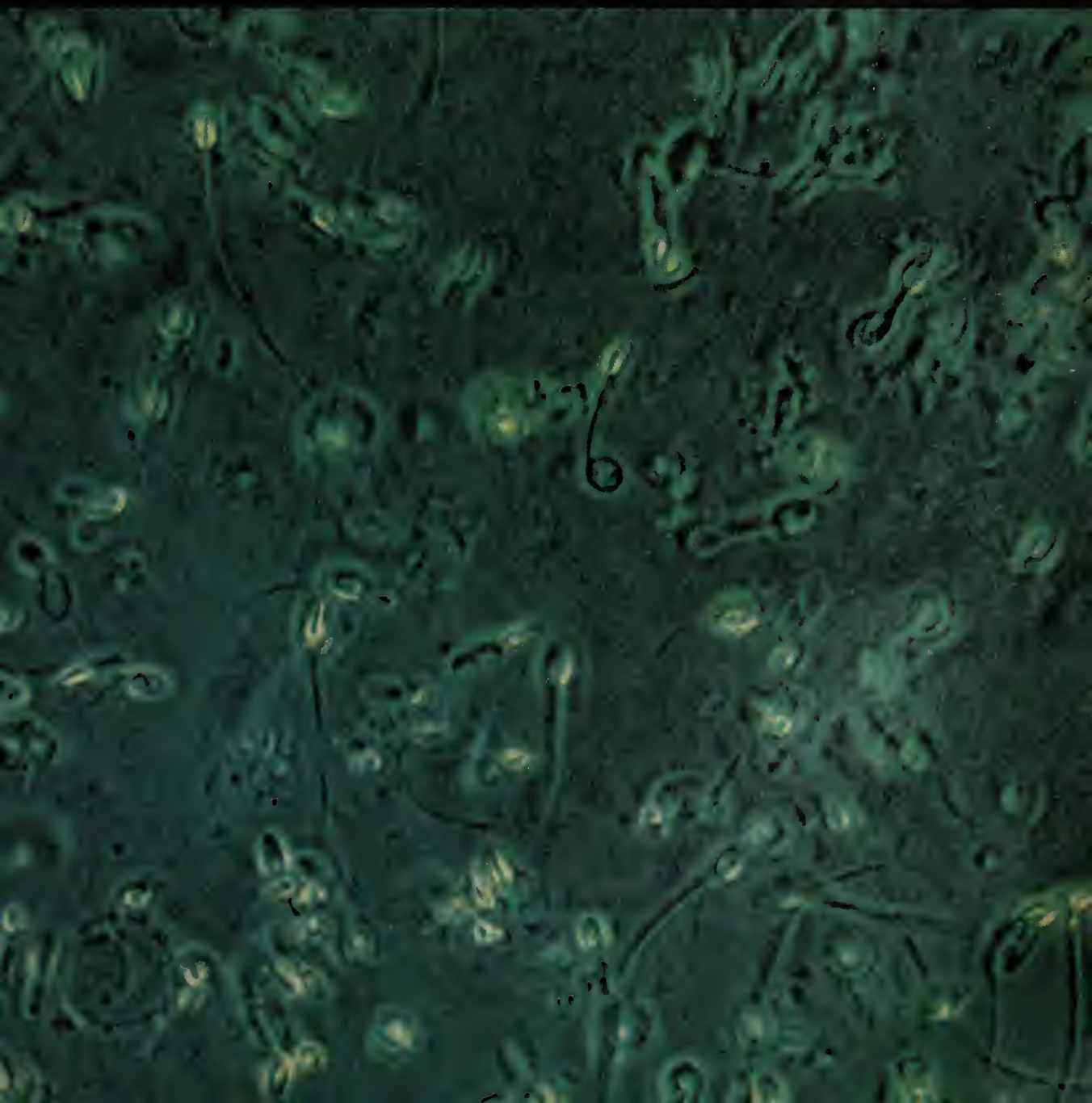
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When the talk turns to oral contraceptives, it makes medical sense to remember low-dose Norinyl-1.

(norethindrone 1mg, $\bar{c}$ mestranol 0.05mg)

Turn page for contraindications, precautions and side effects.



Reduction of oral contraceptive dosage to the lowest effective levels is a well-accepted principle of conservative medical practice. In keeping with this view, Norinyl is now also available as Norinyl-1, containing exactly one half the previous dosage of norethindrone and mestranol. Clinical experience has established that effective fertility control can be achieved with the same degree of reliability and safety with new Norinyl-1 when taken as directed.

What about switching patients from higher dosage forms?

In transferring patients to low-dose Norinyl-1 from higher-dosage oral contraceptives, some breakthrough bleeding may occur in the early cycles. In the majority of cases the bleeding episode is mild and self-limited. The long-term advantages of the lower dosage form should be weighed against the inconvenience of possible breakthrough bleeding in the individual patient.

Prescribing Information

Contraindications: Patients with any symptoms or history of thrombophlebitis, pulmonary embolism, liver dysfunction or disease, carcinoma of breast or genital organs, or undiagnosed vaginal bleeding.

Warnings: Discontinue medication pending examination if there is sudden partial or complete loss of vision, proptosis, diplopia or migraine. If examination reveals papilledema or retinal vascular lesions, medication should be withdrawn. The safety of Norinyl-1 in pregnancy has not been demonstrated. If a patient misses two consecutive periods, pregnancy should be ruled out before continuing the medication. If she has not adhered to the prescribed schedule, pregnancy should be considered at the first missed period. Active ingredients of oral contraceptives have been detected in the milk of mothers who received these drugs; the significance to infants has not been determined.

Precautions: Pretreatment physical should include examination of the breasts and pelvic organs, as well as a Papanicolaou smear. If endocrine or liver function tests are abnormal during therapy, repeat tests are recommended after the drug has been withdrawn for two months. Following administration of drug, preexisting uterine fibromyomata may increase in size. Careful observation and caution are required for patients with symptoms or history of epilepsy, migraine, asthma, cardiac or renal dysfunction, cerebrovascular accident, psychic depression, and diabetes. In cases of undiagnosed vaginal bleeding, adequate diagnostic measures are indicated. Possible long-term effects of the drug on pituitary, ovarian, adrenal, hepatic or uterine function must await further studies. The physician should be alert to the earliest manifestations of thrombophlebitis and pulmonary embolism. The drug should be used judiciously in those young patients in whom bone growth is not complete. The age of the patient constitutes no absolute limiting factor, although treatment with Norinyl-1 may mask symptoms of the climacteric. The pathologist should be advised of Norinyl-1 therapy when relevant specimens are submitted.

Side Effects: The following have been observed with varying incidence in patients receiving oral contraceptives: nausea, vomiting, gastrointestinal symptoms, breakthrough bleeding, spotting, change in menstrual flow, amenorrhea, edema, chloasma or melasma, breast changes (tenderness, enlargement and secretion), change in weight (increase or decrease), changes in cervical erosion and cervical secretions, suppression of lactation when given immediately postpartum, cholestatic jaundice, migraine, rash (allergic), rise in blood pressure in susceptible individuals, mental depression. Although the following side effects have been reported in users of oral contraceptives, no cause and effect relationship has been established: anovulation posttreatment, premenstrual-like syndrome, changes in libido, changes in appetite, cystitis-like syndrome, headache, nervousness, dizziness, fatigue, backache, hirsutism, loss of scalp hair, erythema multiforme, erythema nodosum, hemorrhagic eruption, and itching. The following occurrences have been observed in users of oral contraceptives (a cause and effect relationship has neither been established nor disproved): thrombophlebitis, pulmonary embolism, neuroocular lesions.

The following laboratory tests may be altered by the use of oral contraceptives: increased sulfobromophthalein and other hepatic function tests, coagulation tests (increase in prothrombin, factors VII, VIII, IX and X), thyroid function (increase in PBI and butanol extractable protein-bound iodine and decrease in T^3 values), metyrapone test, pregnanediol determination.

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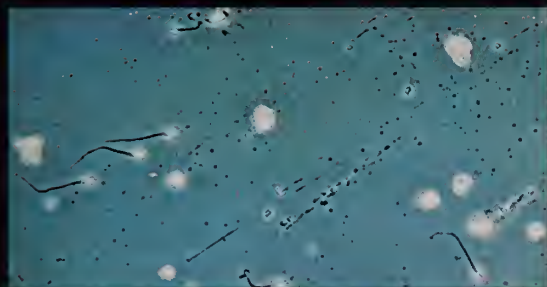
Here's why Norinyl-1 makes medical sense.

The effectiveness of Norinyl-1 as a low-dose oral contraceptive may be explained by its possible multiple action. In addition to its primary action of suppression of ovulation, Norinyl-1 may offer additional protective mechanisms... (1) creation of a cervical mucus that may be hostile to sperm penetration, and (2) development of an endometrium that may be out of phase with nidation. These effects are illustrated below.

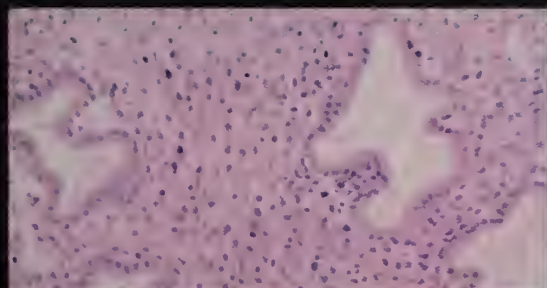
Untreated Patient



Cervical mucus at midcycle is usually thin and watery, with Spinnbarkeit (stretchability) of 15 to 20 cm.



Spermatozoa appear healthy, active, freemoving.

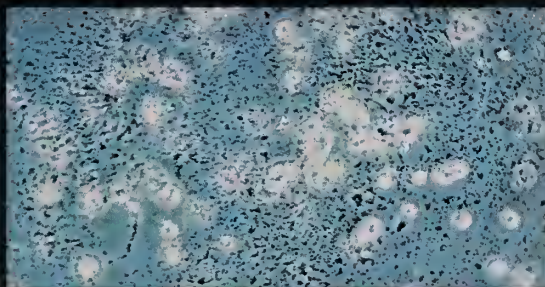


Endometrium of untreated patient is receptive to the fertilized ovum during secretory phase.

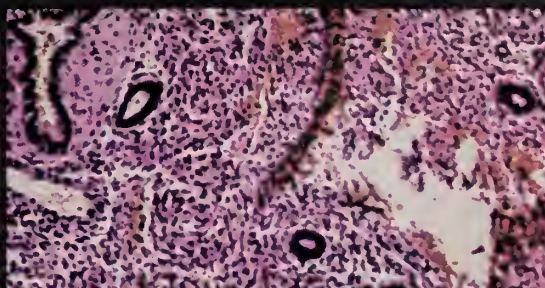
Norinyl-1 Patient



Cervical mucus at midcycle is scanty, viscous—with Spinnbarkeit of 1 cm. or less.



Immobile spermatozoa as they appear in cervical mucus taken from patient treated with Norinyl-1.



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With Synalar, a high degree of efficacy does not mean high price. And—a small quantity goes a long way. Thus, your patients can often obtain the “economy” of a hydrocortisone preparation with the proved efficacy of a potent, truly advanced steroid.

Synalar[®]
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For everyday topical steroid therapy

Synalar® 0.01%

fluocinolone acetonide

provides economy in two practical dosage forms

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Product Information

Contraindications: Tuberculous, fungal, and most viral lesions of the skin (including herpes simplex, vaccinia, and varicella). Not for ophthalmic use. Contraindicated in individuals with a history of hypersensitivity to any of the components.

Precautions: Synalar preparations are virtually nonsensitizing and nonirritating. However, the solution may produce burning or stinging when applied to denuded or fissured areas. In some patients with dry lesions, the solution may increase dryness, scaling or itching. Where severe local infection or systemic infection exists, the use of systemic antibiotics should be considered, based on susceptibility testing. While topical steroids have not been reported to have an adverse effect on pregnancy, the safety of their use on pregnant females has not absolutely been established. Therefore, they should not be used extensively on pregnant patients, in large amounts, or for

prolonged periods of time. **Side Effects:** Side effects are uncommon with topical corticosteroids. As with all drugs, however, a few patients may react unfavorably to Synalar under certain conditions. In such cases the agent should be discontinued and appropriate measures taken.

Availability: Synalar (fluocinolone acetonide) Cream 0.025%—5, 15 and 60 Gm. tubes and 425 Gm. jars. Cream 0.01%—15, 45 and 60 Gm. tubes and 120 Gm. jars. Solution 0.01%—20 and 60 cc. plastic squeeze bottles. Ointment 0.025%—15 and 60 Gm. tubes. Neo-Synalar® (neomycin sulfate 0.5% [0.35% neomycin base], fluocinolone acetonide 0.025%) Cream—5, 15 and 60 Gm. tubes.

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Contraindications: Hypersensitivity and most cases of severe renal or hepatic disease.

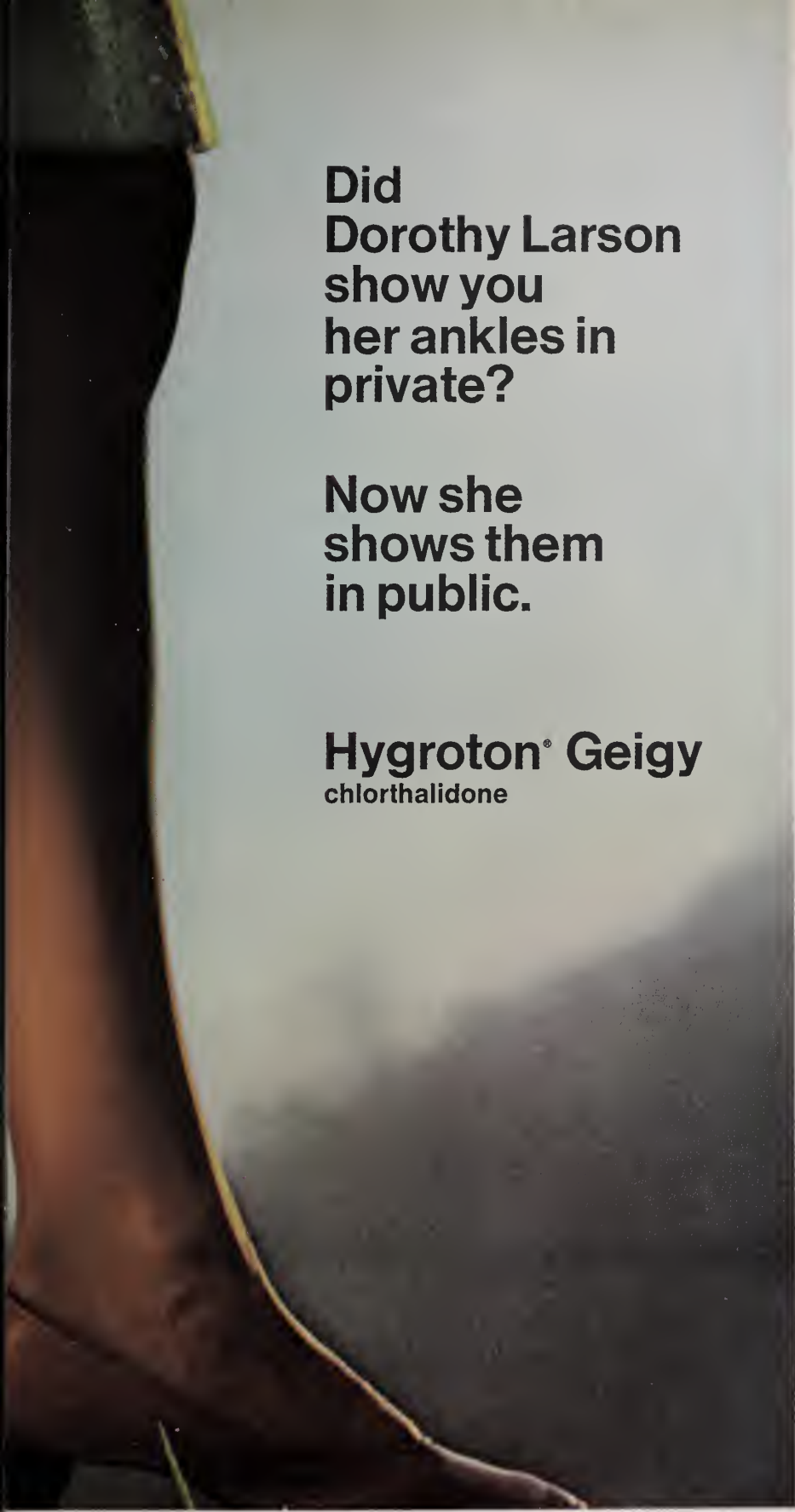
Warning: With the administration of enteric-coated potassium supplements, which should be used only when adequate dietary supplementation is not practical, the possibility of small bowel lesions (obstruction, hemorrhage, and perforation) should be kept in mind.

Surgery for these lesions has frequently been required and deaths have occurred. Discontinue enteric-coated potassium supplements immediately if abdominal pain, distention, nausea, vomiting, or gastrointestinal bleeding occur. Use with caution in pregnant patients, since the drug may cross the placental barrier and adverse reactions which may occur in the adult (thrombocytopenia, hyperbilirubinemia, altered carbohydrate metabolism, etc.) are potential problems in the newborn.

Precautions: Antihypertensive therapy with Hygroton should always be initiated cautiously in postsympathectomy patients and in patients receiving ganglionic blocking agents or other potent antihypertensive drugs, or curare. Reduce dosage of concomitant antihypertensive agents by at least one-half.

Barbiturates, narcotics or alcohol may potentiate hypotension. Because of the possibility of progression of renal damage, periodic determination of the BUN is indicated. Discontinue if the BUN rises or liver dysfunction is aggravated. Hepatic coma may be precipitated. Electrolyte imbalance, sodium or potassium depletion may occur. If potassium depletion should occur during therapy, Hygroton should be discontinued and potassium supplements given, provided it

may potentiate hypotension. Because of the possibility of progression of renal damage, periodic determination of the BUN is indicated. Discontinue if the BUN rises or liver dysfunction is aggravated. Hepatic coma may be precipitated. Electrolyte imbalance, sodium or potassium depletion may occur. If potassium depletion should occur during therapy, Hygroton should be discontinued and potassium supplements given, provided it



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A nice way to treat the Mrs. Larsons in your practice.

Hygroton therapy may mean troublesome side effects for some patients. A summary of the prescribing information is shown below.

...t does not have marked oli-
...special care in cirrhosis or
... ischemic heart disease and
...ients receiving corticoste-
...ACTH, or digitalis. Salt re-
...on is not recommended.
...e Reactions: Nausea, gastric
...on, vomiting, anorexia, con-
...on and cramping, dizziness,
...ness, restlessness, hypergly-
..., hyperuricemia, headache,
...e cramps, orthostatic hypot-

tension, aplastic anemia, leuko-
penia, thrombocytopenia, agranu-
locytosis, impotence, dysuria,
transient myopia, skin rashes, urti-
caria, purpura, necrotizing angitis,
acute gout, and pancreatitis when
epigastric pain or unexplained G.I.
symptoms develop after prolonged
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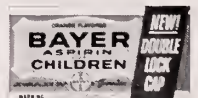
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When a milestone in life is marred by depression...



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THIS IS THE FOURTH of a fifth series of special numbers of the MEDICAL ANNALS, the scientific material for which is supplied by medical institutions and scientific organizations in the Washington Metropolitan Area. For the WALTER REED ARMY MEDICAL CENTER NUMBER the Editorial Board is indebted to Colonel Loren F. Parmley, MC, USA, Consulting Editor of the MEDICAL ANNALS, who secured the papers which appear in this issue.

Amebic Abscess of the Liver

The Value of the Isotope Hepatoscan in Diagnosis and Management

COLONEL LOREN F. PARMLEY, JR., MC, USA,* LT. COLONEL THOMAS W. SHEEHY, MC, USA,†
LT. COLONEL GERALD S. JOHNSTON, MC, USA,‡ AND LT. COLONEL H. WORTH BOYCE, MC, USA§

WHEN SO MANY AMERICANS are on the move as they are today, traveling or living in many different areas of the world, it may be expected that certain infectious diseases, especially their less well known complications and sequelae, will be encountered more frequently in clinical practice. This has been the experience at Walter Reed General Hospital in regard to *Endamoeba histolytica* infection and its complication of amebic abscess of the liver. Sixteen patients with this complication have been treated at this Hospital since 1963. Whereas in the tropical and subtropical environments the amebic infection manifests itself most commonly by severe enteric symptoms, especially dysentery, this is not so in the temperate zones. Despite a surprisingly high incidence of *E. histolytica* infection, estimated at near 10 per cent in the population of these northern climes,¹ symptoms may be lacking, and bowel dysfunction when present is often mild. When clinical manifestations of more serious significance develop, one is more apt to find that the patient has tissue invasion by the *E. histolytica*, and liver abscess is a frequent expression of the

disease. Further, the onset of clinical symptoms from this invasive process may be delayed a considerable though variable period of time from the time of initial infection which may have gone unrecognized.

Usually the clinical picture that results from an amebic abscess of the liver poses a diagnostic problem, especially when it is not associated with dysentery or with laboratory or historical evidence of enteric infection with *E. histolytica*. Table 1 outlines some of the salient clinical and laboratory findings in the 16 individuals with this disease that comprised this series. One of the most valuable methods of study of these patients has proven to be that of radioisotope scintiscanning of the liver. This technique demonstrated as clinically feasible a decade ago^{2, 3} and developed by clinical investigators in subsequent years^{4, 5, 6} has been applied to the diagnosis and treatment of amebic liver abscess by several others.^{7, 8, 9} In our studies liver scans were obtained by means of a mechanical photoscanner|| which has a thallium-activated sodium iodide crystal with focusing collimation. Radioactive colloidal gold-198, 100 microcuries, was injected intravenously 15 to 30 minutes prior to scanning. This colloid was concentrated by the reticulo-endothelial cells of the liver. Anterior scans on all patients and lateral scans on most patients were done initially and at 2- to 6-week intervals until evidence of a hepatic lesion was no longer present.

* Chief, Department of Medicine, Walter Reed General Hospital, Washington, D. C. 20012.

† Professor of Medicine, University of Alabama, Birmingham, Alabama; formerly Assistant Chief, Department of Medicine, Walter Reed General Hospital.

‡ Chief, Radioisotope Section, Walter Reed General Hospital.

§ Chief, Gastroenterology Service, Walter Reed General Hospital.

|| Picker Magnascanner III or V.

TABLE 1: Clinical and Laboratory Features in 16 Cases of Amebic Abscess of the Liver

AGE: 22-52 years	
SEX: 15 males and 1 female	
DURATION OF SYMPTOMS BEFORE HOSPITALIZATION: 1-14 weeks (mean of 2.8 weeks)	
	No. Patients
SYMPTOMS:	
Fever.....	15
Weight loss.....	12
Malaise.....	12
Chills.....	11
Diarrhea.....	8
Pain:	
Chest.....	8
Right upper quadrant.....	9
Shoulder.....	6
Back.....	1
PHYSICAL FINDINGS:	
Hepatic	
Tenderness.....	13
Enlargement.....	12
Pleural	
Effusion.....	6
Rub.....	2
Elevated diaphragm (X-ray).....	7
Jaundice.....	2
LABORATORY FINDINGS:	
Leukocytosis (15-38,000/cu. mm.).....	16
Anemia (hematocrit less than 36 per cent).....	15
Elevated	
Alkaline phosphatase (17-93 KAU).....	11
SGOT (53-190 units).....	10
BSP.....	1
Serum bilirubin.....	2
Hemagglutination titer.....	6/6
Proteinuria.....	7
Low serum iron.....	8/8

We want to emphasize that the incidence of *E. histolytica* infections will be increased in those individuals who have returned to this country after living or visiting in areas where amebiasis flourishes such as Africa and Southeast Asia, that the infection may manifest itself after an apparent dormant period, and that often the major initial clinical manifestation may be an amebic abscess of the liver. The value of the hepatoscan in the diagnosis of the usual perplexing clinical picture caused by such an abscess and the usefulness of the liver scan in the therapeutic management of the infection will be emphasized. To accomplish this purpose 4 case studies from our series of 16 patients with amebic abscess of the liver have been chosen to present the important clinical features and demonstrate the value of the hepatoscan in their diagnosis and treatment.

Case 1. A 22-year-old female student developed fatigue, nausea, vomiting, right upper quadrant pain,

weight loss, and intermittent fever in July 1966. A thorough evaluation at another hospital including barium enema and stool examinations failed to establish a diagnosis although irritable colon syndrome was suspected. While residing in a mid-East country in 1963 and 1964 she had had short episodic bouts of nausea, vomiting and diarrhea which had recurred intermittently since that time. These episodes always ceased without treatment and were never associated with blood in the stools. Subsequent to her hospitalization and because of persistence of symptoms with suspicion of liver disease, a radioisotope hepatoscan was obtained, which revealed a large defect of the liver (figure 1-A). A more intensive search for *E. histolytica* was then undertaken and was rewarded

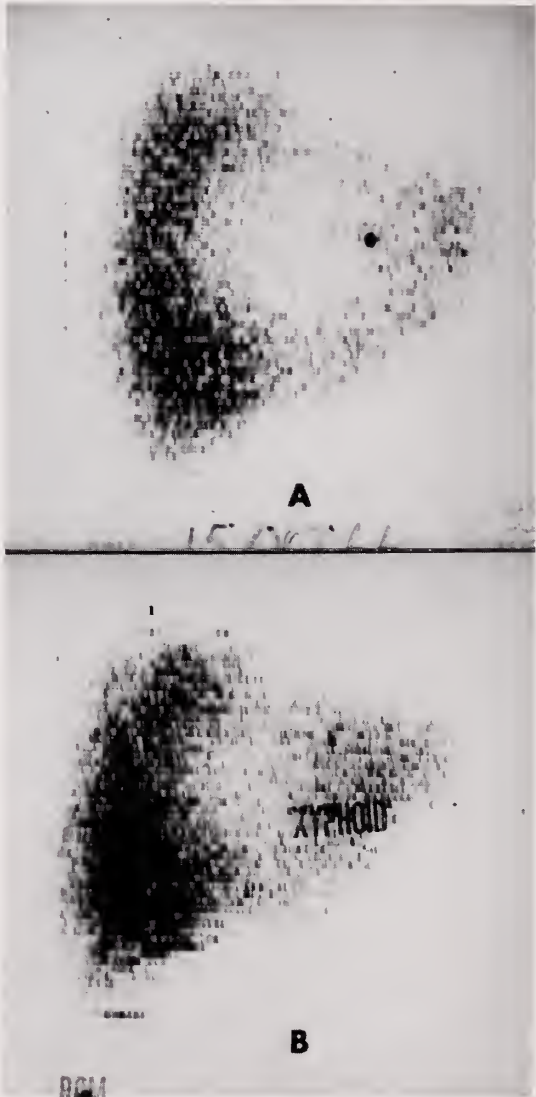


FIG. 1. A. Anterior An¹⁹⁸ hepatoscan on October 15, 1966, and B, January 18, 1967, demonstrating a large amebic abscess of the interlobar area of the liver and an almost 50 per cent decrease in size following a course of antiamebic therapy. The patient was entirely asymptomatic at time of second scan.

by the finding of the cystic form of the organism. The patient was given a 6-day course of emetine therapy with a good clinical response, and she became afebrile. Aspiration of the abscess percutaneously was then attempted without success, and the next day she had fever, chills, right upper and lower abdominal pain, and a falling hematocrit. She was given a transfusion of 500 ml. of whole blood, started on tetracycline therapy, and transferred to Walter Reed General Hospital where on continued treatment the symptoms subsided. A 3-week course of chloroquine therapy, 0.3 Gm. (base) daily, as well as courses of Diodoquin® and carbarsone therapy directed against the enteric infection resulted in clearing of the enteric infection and progressive but slow resolution of the abscess (figure 1-B). For this reason an additional course of chloroquine was prescribed, and medical observation is continuing.

Comment. Although there is no racial predominance in the occurrence of amebic liver abscess, the incidence in the female is definitely less than in the male by a ratio of approximately 1 to 7,¹⁰ and this predominance of the male sex in some series has been reported as high as 93.4 per cent.¹¹ This patient was the only female in our series. She demonstrates that relative innocuous enteric symptoms may not be recognized as due to infection by the pathogenic ameba even though the individual is living in an area considered highly endemic for *E. histolytica* infection. The often delayed clinical onset of an amebic abscess of the liver is also illustrated since it became evident 3 years from the presumed onset of the infection. An intensive clinical investigation did not reveal the cause of her illness, and the lesion and etiology were appreciated only after the liver scan revealed the abscess. The failure of percutaneous liver aspiration to evacuate the liver abscess and the subsequent symptoms demonstrate the complications of infection and/or bleeding that this therapeutic approach may cause. In this patient aspiration was not necessary and the improving clinical condition of the patient, reinforced by hepatosean evidence of continuing resolution of the abscess, provided the best evidence of therapeutic success.

Case 2. A 37-year-old man developed fever, bloody diarrhea, headache, and sweats 3 months after arrival in Southeast Asia. He was hospitalized, and investigation revealed an ulcerative colitis on proctoscopy, but no pathogens were identified in the stool. The liver was slightly enlarged and tender. He was treated with tetracycline during the first 6 days of his hospitalization, but the clinical picture worsened, leukocytosis increased, and exploratory laparotomy was undertaken with no findings other than a liver that appeared

somewhat enlarged and edematous. A wedge biopsy of the liver was obtained. The next day a right pleural effusion developed, and thoracentesis revealed creamy brown pus and straw-colored fluid. The diagnosis of amebic abscess of the liver was then entertained, and surgical drainage of the abscess was carried out transpleurally. Treatment with emetine and chloroquine was begun, and within 3 days the patient was afebrile. Treatment was continued with a course of chloroquine and Diodoquin. The response to therapy was followed by hepatoseans (figure 2) which showed resolution from an 8 by 8 cm. abscess evident 3 weeks after abscess drainage and institution of anti-amebic therapy to complete clearing with a normal scan 4 months later.

Comment. The development of a liver abscess during the acute stage of amebic dysentery, presumably through spread in the portal and lymphatic circulation, has been estimated clinically to occur in anywhere from 3 to 17 per cent of patients,¹⁰ but in DeBakey and Ochsner's collected series of 5,250 autopsy cases, 36.6 per cent revealed this complication.¹¹ The confusion surrounding the initial phase of this patient's illness was in part due to failure to identify the *E. histolytica* as the cause of the enteric lesions and emphasizes the difficulties, even in the presence of obvious amebic dysentery, of identifying the cysts and trophozoites. The laboratory techniques best suited to this identification are not the subject of this paper. Several excellent texts have sections devoted to this problem.^{1, 10, 12} Suffice it to say, repeated examinations of the fresh stool should be done, and specimens obtained at proctoscopy or rectal mucosal biopsy may be used to increase the positive diagnostic yield. The individual studying the stool must be well trained in the identification of the organism. Further, it must be recognized that the amebae may be shed in the stool only intermittently and then in decreased numbers following antibiotic therapy such as tetracycline or diagnostic studies such as a barium enema. The deceptively benign appearance of the liver at laparotomy is worthy of note since it shows that hepatoseans may be much more effective in demonstrating an amebic abscess than direct vision of the liver. The appreciation of the clinical problem only after rupture of the liver abscess into the chest cavity is unfortunately not unusual. This event hopefully may be diminished if hepatoseans are utilized early in the course of the liver abscess to permit diagnosis and effective medical treatment before rupture occurs. The resolution of the abscess was monitored by the hepatoseans and it has been shown that the rate of disappearance of an amebic liver abscess as documented by this

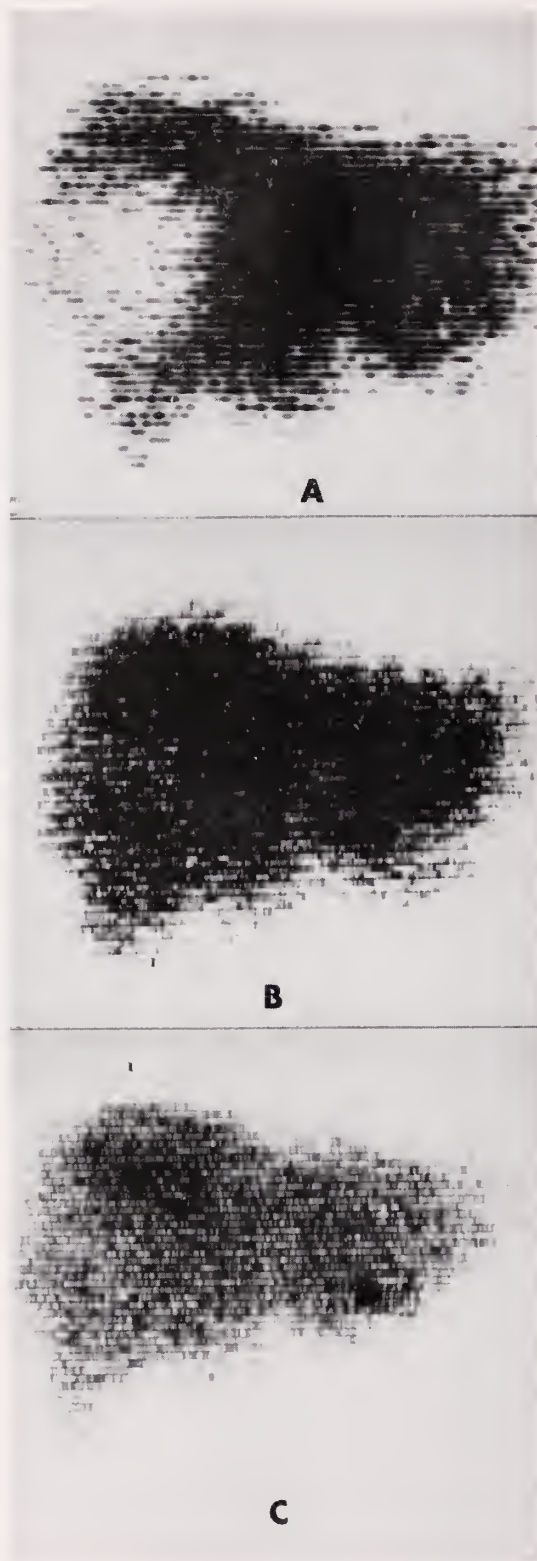


FIG. 2. A. Au^{198} hepatosean of February 9, 1966 showing a large amebic abscess of the right lobe of an enlarged liver. B, C. Following therapy, scans on May 25, 1966 and June 21, 1966 show complete resolution of abscess and return of liver to normal size.

method is not appreciably hastened by prior percutaneous aspiration or surgical drainage as compared to one treated by medical therapy only.

Case 3. A 52-year-old man, a native of Southeast Asia, was well, with no definite history of amebic infection until June 1966 when he began to have fever and malaise. He was thought to have a viral type of illness, but the fever persisted and became more pronounced, spiking to 102°F with a leukocytosis of 12,450. There was only mild tenderness on palpation of a liver edge felt 2 cm. below the right costal margin. He was treated with tetracycline and chloramphenicol as well as chloroquine for possible cryptic malaria, but these medications did not alter the clinical course. Because of persistent fever for 2 weeks with a leukocytosis increasing to 24,000 he was hospitalized at another hospital where laboratory abnormalities of liver function were demonstrated, but the physical findings were unchanged. An intravenous cholangiogram identified a mass on the inferior surface of the liver. Repeated examinations of the stool failed to reveal *E. histolytica*. Antibiotic therapy was reinstituted without response, and emetine and oral chloroquine therapy were started and the patient transferred to Walter Reed General Hospital with the tentative diagnosis of hepatoma. On admission the patient appeared acutely ill. The only positive physical findings were a low-grade fever and hepatomegaly with a smooth nontender liver edge palpable 5 cm. below the right costal margin. There was no pain or tenderness on percussion over the liver or palpation over the intercostal spaces. Nevertheless, liver scans (figure 3-A) revealed a large filling defect of grapefruit size involving the right lobe of the liver. An alkaline phosphatase of 60.6 KA units, SGOT of 49 units, bromsulfalein retention of 24 per cent with a normal bilirubin, a leukocytosis of 12,000, and a hematocrit of 34 per cent were found on admission. The diagnosis of amebic abscess of the liver was made, and emetine therapy, 60 mg. I.M. daily, was continued for 6 days and stopped when QRS and ST-T electrocardiographic abnormalities and a ventricular diastolic gallop were found on examination of the heart. Chloroquine (base), 150 mg., given concurrently with the emetine, was increased to 300 mg. for 14 days. Diodoquin, 650 mg., t.i.d., was given for 14 days for possible intraluminal enteric infection, although repeated stool examinations failed to reveal the pathogen. During the first week of hospitalization, although the patient was afebrile and clinically improving, there was a disturbing rise in alkaline phosphatase to a high of 93.1 KA units, an SGOT of 66, and an SGPT of 83, but the serum bilirubin was persistently normal. The liver scan obtained 9 days after admission revealed slight but definite reduction in the abscess (figure 3-B), and in the following week the abnormalities of liver function gradually returned toward normal. A course of chloroquine therapy was repeated after a 3-week interval from the first course. Subsequent liver scans (figure 3-C and

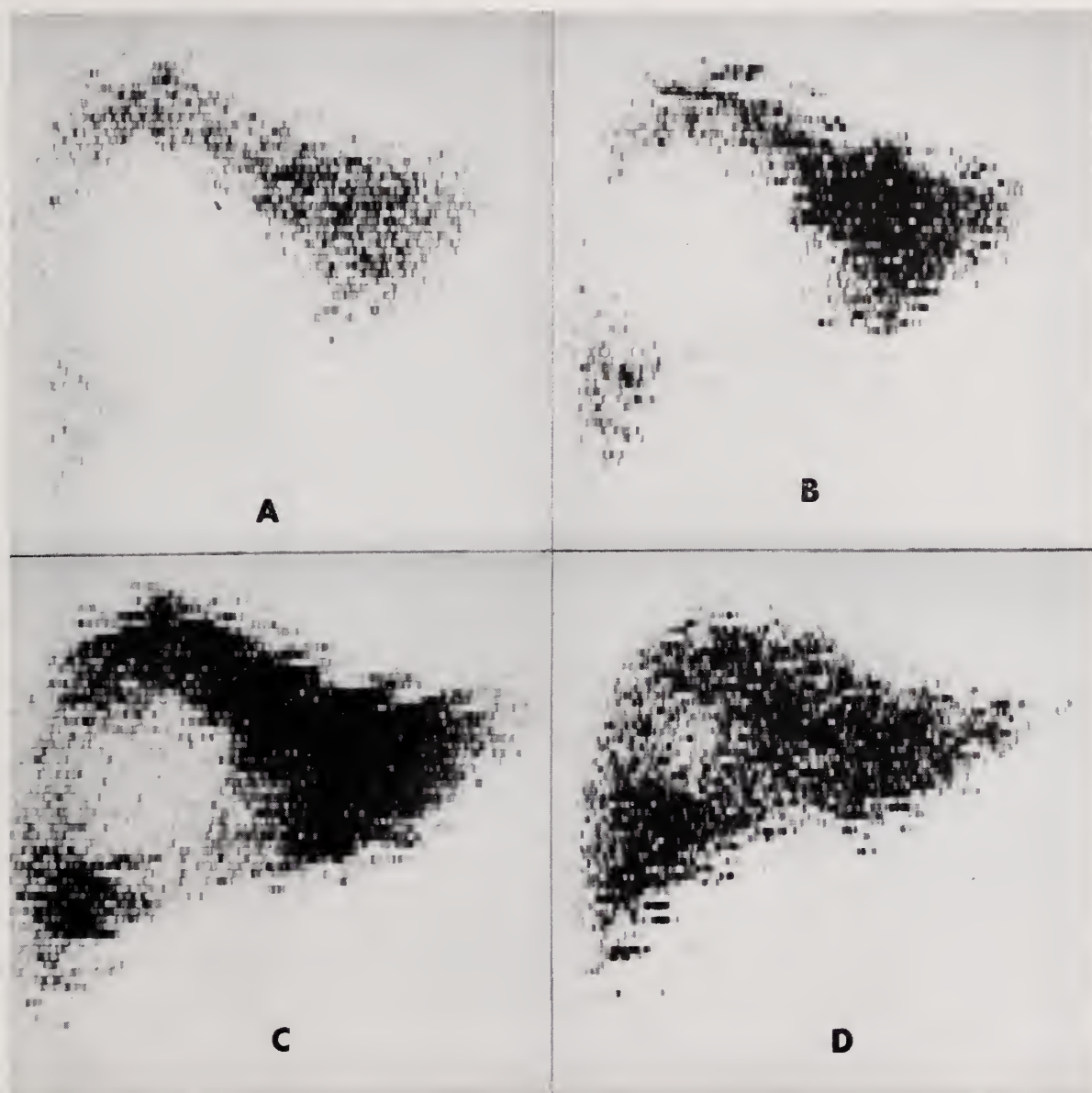


FIG. 3. A. Involvement of almost entire right lobe of liver by a large amebic abscess detected by hepatosean on July 2, 1966. B. Within 9 days a scan revealed definite decrease in size of abscess following emetine-chloroquine therapy. C, D. Hepatoseans on July 20, 1966 and April 17, 1967 show continued resolution of abscess after medical treatment with return of liver to normal size.

D) continued to show improvement, and the patient remained clinically well.

Comment. There are several features of this patient's clinical course that are worthy of comment. The first is fever, often of low grade, either remittent or sustained, which frequently heralds the development of amebic liver abscess and may be the primary manifestation as in this patient. Fever was present in 15 of our 16 patients, but in Wilmot's large series of 304 cases of liver abscess fever was a clinical feature in only 81 per cent of his patients.¹⁰ The lack of pain and hepatic ten-

derness is, however, distinctly unusual, although it was a feature in 2 of our patients. It was observed in only 1 per cent of Wilmot's patients. As emphasized by Craig¹² the absence of bowel symptoms is common. The laboratory studies indicative of liver involvement, as in this patient, do not seem to indicate the extent of the abscess, nor are they specific enough to be diagnostic. If any pattern can be identified it is elevated alkaline phosphatase and SGOT in the presence of a usually normal bilirubin. As in this patient the severity of the laboratory tests of liver function

may indicate a deteriorating clinical situation when the clinical condition of the patient is in fact improving and the hepatosean documents continuing resolution of the abscess. The hepatosean in this patient was definitely pivotal in the decision to continue medical treatment rather than to resort to aspiration or surgical drainage.

A brief comment should be made in respect to emetine therapy and its cardiotoxicity as demonstrated by this patient. Electrocardiographic abnormalities may be expected in almost every patient who receives a course of emetine therapy, and these are predominantly nonspecific ST-T wave variations. Also, serious toxicity is unusual when the dosage of 6 to 12 grains of emetine at a daily dose of 1 grain per day is employed.¹³ The ST-T abnormalities that may appear indicate the

with "massive" doses of intramuscular penicillin for several days with progressive worsening of his condition, with fever, anorexia, and weight loss in addition to the cough and chest pain. There had been an episode of diarrhea 2½ weeks long 6 months before departure from Southeast Asia.

On admission to Walter Reed General Hospital the man appeared chronically ill with a temperature of 103.4°F and a pulse rate of 102 per minute. The only other positive findings were those of dullness on percussion of the right lower thorax with a friction rub audible over the same area. Tenderness was elicited by percussion over the liver area, but no enlargement of the liver was detected. There were a leukocytosis of 13,000 with 83 per cent neutrophils, a hematocrit of 37 per cent, and an alkaline phosphatase of 16.1 KA units. Bilirubin and BSP tests were normal. A chest roentgenogram demonstrated some small areas of atelectasis at the right lung base with an elevated

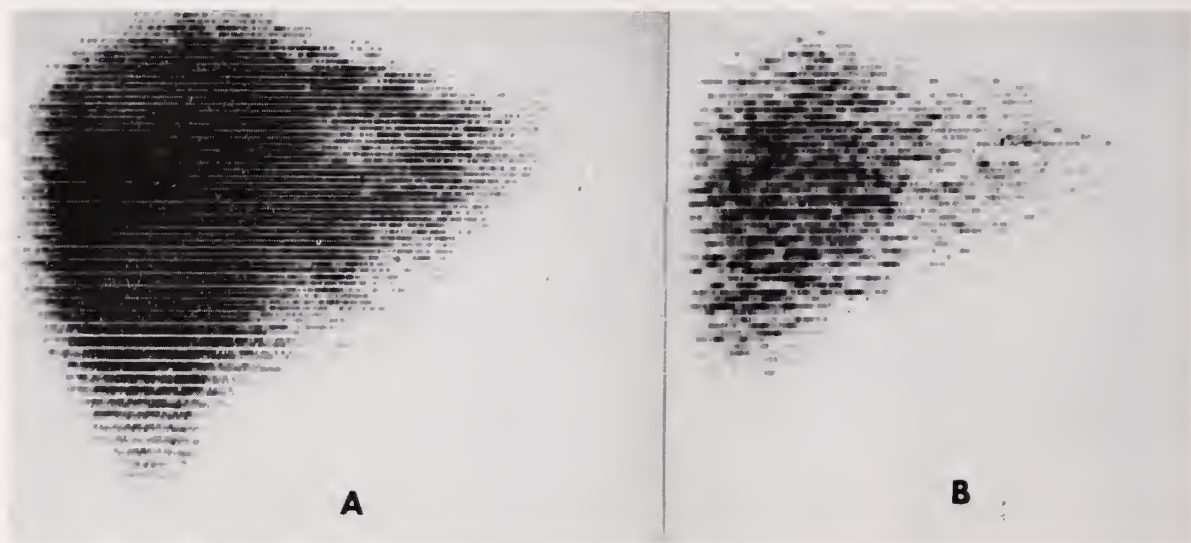


FIG. 4. A. Hepatosean of December 10, 1963 reveals marked hepatomegaly and multiple small abscesses. One in each lobe is easily identifiable by decreased Au^{198} uptake, but a third abscess is less distinct in the right lobe. B. Rapid clearing of lesions and return of liver to normal size in scan of January 9, 1964.

necessity for careful monitoring of the patient. The value of emetine therapy of an amebic abscess is too great to discontinue it unless more severe electrocardiographic abnormalities, such as QRS changes or a ventricular diastolic gallop, indicate myocardial impairment.

Case 4. A 24-year-old man developed malaise en route from Southeast Asia. On arrival home he began to experience a hacking nonproductive cough, a pleuritic type of pain in the right lower region of his chest, and right shoulder pain. He was seen by a physician who told him he had pleuritis and treated him with tetracycline for a week. He did not improve, and 3 days later chest X-ray examination revealed "pneumonia" in his right lung base. He was then treated

diaphragm that proved to be fixed on fluoroscopy. Liver scans (figure 4) revealed 3 definite areas of decreased uptake measuring 3 to 4 cm., 2 in the right and 1 in the left lobe, with enlargement of the liver. A diagnosis of amebic abscess of the liver was made and on appropriate medical therapy the patient showed prompt improvement and was discharged as cured 1 month later.

Comment. This patient as well as the second patient demonstrates one of the more common and often diagnostically confusing complications of amebic abscess of the liver, pleuropulmonary amebiasis. For a more complete understanding of this facet of amebic infection, either as a blood-borne involvement or as secondary to direct ex-

tension from an hepatic abscess, one is referred to the reports of Craig,¹² Ochsner and DeBakey,¹⁴ and others.¹⁵ Suffice it to say, in the presence of amebic abscess of liver the involvement of the lung may be either from rupture of the abscess into these structures, by passage of the organism directly from the liver presumably through the diaphragm and pleura into the lung without frank rupture of the abscess or, finally, as in this patient, by a process that simply results in inflammation of the adjacent thoracic structures resulting in pleural effusion and atelectasis. This last type of chest involvement is common, and in Wilmot's series signs in the base of either the right or left lung were found in 78 per cent of his 304 patients.¹⁰

When the abscess ruptures into the chest the problem may be of considerable magnitude, since empyema, pneumonitis, lung abscess, or a bronchohepatic fistula may develop. Usually the right side of the chest is involved, but with an abscess in the left lobe of the liver the left chest structures and pericardium may be affected. Solitary involvement of the left lobe of the liver is uncommon as compared to the right, but, as in this patient, multiple abscesses are frequent. Shaffer et al¹⁶ tabulated the location of amebic liver abscess from reported autopsy series and found that in 193 cases the right lobe was involved in 110, the left in 15, and multiple abscesses in 104 or 55 per cent of the cases.

When confronted by a diagnostic problem that pleuropulmonary amebiasis often raises, the clinician now has available to him the hepatoscan that can provide the critical study indicating the diagnosis without resort to the hazards of blind liver aspiration or operation. Further, the site and number of abscesses is revealed by the hepatoscan, a capability heretofore reserved for the autopsy table.

Discussion

In the past the diagnosis of an amebic abscess of the liver, especially in the early stage of development and before rupture, has been more dependent on astute clinical intuition than convincing diagnostic evidence. This is because of the paucity of definitive clinical findings and the non-specific laboratory studies in many of the patients suffering from this form of amebiasis. Those physicians who have had extensive clinical experience with hepatic amebiasis have established criteria for diagnosis which illustrate the difficulty that has existed in establishing this diagnosis. Kean,¹⁷ consolidating the experience of others, considered 5 criteria as important: (1) enlarged tender liver,

(2) slight to moderate fever, (3) leukocytosis and laboratory evidence of disturbed hepatic function, (4) response to specific antiamebic therapy, and (5) a history of intestinal amebiasis. Lamont and Pooler¹⁸ in a study of 250 patients with hepatic amebiasis modified these criteria by rejecting the fifth, since in careful questioning of their patients 55 per cent denied any previous history of diarrhea or dysentery. To the laboratory criteria they added a normochromic normocytic anemia as a suggestive hematologic finding of importance. They also added 2 additional criteria: (1) radiologic findings such as elevation of the diaphragm, pleural effusion, and atelectasis or patchy pneumonitis, and (2) the demonstration of amebic pus either by aspiration or on the occurrence of spontaneous rupture into an adjacent viscus or serous cavity.

It is evident that the hepatoscan will add an important dimension to the diagnostic criteria of amebic liver abscess and appreciably alter for the better the management of this disease. If a patient develops fever, leukocytosis, and tender hepatic enlargement without significant hyperbilirubinemia, the presence of an amebic liver abscess should be considered. It can now be detected by hepatoscan early in the course of the disease prior to the stage when the findings indicate impending or actual rupture of the abscess. The necessity to demonstrate amebic pus on aspiration is no longer essential for diagnosis, and, in fact, aspiration is undesirable unless it is deemed necessary to prevent rupture or unless a bacterial infection is suspected. In addition, the hepatoscan may well prove to be of value in solving some of the discrepancies noted between the clinician and the pathologist, particularly in regard to the question of amebic hepatitis, so often raised by the clinician in the patient with acute amebic dysentery but disputed by the pathologist. It may be that small abscesses detectable only by hepatoscan, as in the fourth patient we presented, are responsible and the true incidence of amebic liver abscess is much higher than that which previously has been based on autopsy series or on serious cases with impending or actual rupture.

The differential diagnosis may still be difficult even with the use of the hepatoscan; in fact, it can be anticipated that the liver scan may present problems, especially early in the course of the disease. The most frequent pathologic processes causing filling defects of the liver that must be differentiated are malignant lesions and pyogenic abscess. Often the associated clinical picture will prove most helpful, but in some instances liver

biopsy or diagnostic aspiration may be required. Since amebic abscesses are usually sterile, the finding of bacteria will be in strong favor of a pyogenic etiology. The finding of the trophozoite of *E. histolytica* in the pus of an amebic abscess is uncommon, and the pus may be of almost any type instead of the anchovy material considered characteristic. Neither can one rely on the finding of *E. histolytica* in the stool. In the majority of patients with amebic abscess of the liver bowel symptoms are absent, and in only about 15 per cent of these have cysts of *E. histolytica* been found.¹⁰ Thus, one of the major criteria of diagnosis must remain that of response to antiamebic therapy. Here again the value of the hepatoscan is evident, since, after the patient's symptoms begin to subside, usually within the first week of therapy, the response to antiamebic therapy can now be objectively monitored by serial scanning.

The therapy of amebic liver abscess is primarily medical, but aspiration or surgical drainage of the abscess may be required. The efficacy of medical treatment is dependent upon early diagnosis, and the hepatoscan will increase this capability. A systemic amebicidal drug, one that will attack the trophozoite of *E. histolytica* in the tissues, and a contact amebicidal drug, one that will be effective against the trophozoite and cyst in the intestinal lumen, are the mainstays of medical treatment. Emetine, chloroquine and Atabrine® are the main systemic amebicides, and Diodoquin, carbarsone and the tetracyclines are the more popular contact amebicides. Table 2 presents one of the several treatment regimens that may be used, and is recommended as a guide to therapy. Since a failure or recurrence rate after a course of emetine therapy is probably in the range of 7 per cent and after chloroquine about 25 per cent, combined therapy given concurrently or in sequence is advised to effect a cure rate approaching 100 per cent.¹⁰ This, of course, must be supplemented by a course of therapy to eradicate the organism in the intestinal lumen. Diodoquin is both effective and relatively free of serious side-effects, but the other drugs of this category may be equally effective. When amebic dysentery is present an antibiotic such as oxytetracycline has proven effective, probably more by changing the intestinal flora than direct antiamebicidal action. Newer drugs have been developed to treat amebiasis, including Ambilhar® and Teclozan®, but their values remain to be determined. All of these drugs have a toxic potential that must be appreciated. The cardiac and neurotoxicity of emetine are well known and have been commented upon in the discussion of case 3.

A surgical approach with drainage of the amebic abscess has largely been replaced by percutaneous aspiration to minimize the dangers of secondary infection,¹¹ but aspiration also carries with it this hazard and, of more serious magnitude, the danger of fatal hemorrhage. There are, however, certain definite indications for these procedures, and the hepatoscan can play an important role in making the decision. Aspiration is indicated if there is a failure of medical therapy to alleviate clinical symptoms or if the hepatoscan fails to demonstrate progressive diminution in abscess size after 7 to 14 days. If clinical findings or the size of

TABLE 2: A Treatment Program for Amebic Liver Abscess

Medical Combined Therapy	
1. Emetine hydrochloride: 65 mg., I.M., or subcutaneously daily for 7 to 10 days	
2. Chloroquine (300 mg. base equals 500 mg. chloroquine phosphate): 600 mg. (base) stat, and 300 mg. (base) in 6 hours, then 300 mg. (base) for 20 days	
3. Diodohydroxyquin (Diodoquin): 650 mg. 3 times daily for from 14 to 21 days.	
If an active enteric infection is present, add:	
4. Oxytetracycline: 250 mg. every 6 hours for 10 days.	
If clinical findings and hepatoscan fail to show progressive resolution of abscess, may repeat chloroquine course, or after 6 weeks may repeat emetine.	
If <i>E. histolytica</i> persist in stools, add:	
5. Carbarsone: 0.25 Gm., t.i.d. for 10 days	
Aspiration—Needle	
1. Inadequate response to chemotherapy as measured by clinical findings and hepatoscan.	
2. Danger of abscess rupture, especially when in left lobe of liver.	
Open Surgical Drainage	
1. Inadequate response to chemotherapy and aspiration.	
2. Secondary bacterial infection.	

the abscess as determined by the hepatoscan suggest impending rupture into the chest, peritoneal cavity or elsewhere, aspiration should be performed. Likewise an abscess shown by liver scan to be in the left lobe of the liver, because of the serious consequences of rupture into the pericardial sac, should be aspirated even if there is but a slight probability of rupture. With the hepatoscan the problems incident to aspiration are simplified, since blind aspiration is no longer required. Surgical drainage is seldom necessary, but there is the rare patient who fails to respond to medical management and aspiration or whose condition has become critical before medical therapy can be of benefit who may need it. Surgi-

cal treatment is necessary when rupture has occurred, especially into the peritoneal or pericardial cavity.

Conclusions

The clinical picture of amebic abscess of the liver may be deceptive and diagnosis difficult unless the radioisotope hepatoscan is used. One should be alert to the development of hepatic abscess as a complication of an enteric *E. histolytica* infection, especially in those who have recently returned from tropical or subtropical regions. A patient with fever, leukocytosis, and an enlarged tender liver with minor derangement of liver function should be studied by use of the liver scintiscan to evaluate the probability of amebic liver abscess. In this clinical setting, the additional presence of chest findings such as an elevated diaphragm, pleural effusion, and patchy atelectasis or pneumonitis, especially on the right, requires that the liver be evaluated by this technique. If discovered early in its course the amebic abscess of the liver will respond nicely to medical treatment alone and the need for aspiration or surgical treatment is minimized.

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Patients Needed at Clinical Center

THE COÖPERATION OF PHYSICIANS is requested in the referral of patients for studies being conducted by the Endocrinology Branch of the National Cancer Institute at the Clinical Center of the National Institutes of Health in Bethesda, Md.

Three categories of patients are needed:

1. Postmenopausal women with metastatic breast cancer who do not have significant hepatic metastases and have not undergone extensive therapy.
2. Women with metastatic uterine carcinoma suitable for therapy with progestational agents.
3. Men and women with suspected or proven hypogonadism.

Suitable patients will be admitted to the Clinical Center for study and the initiation of appropriate therapy. Upon completion of their studies patients will be returned to the care of the referring physician, who will receive a summary of findings.

Physicians interested in having their patients considered for admission to these studies may write or telephone Dr. Mortimer B. Lipsett or Dr. Griff T. Ross, Clinical Center, Room 12-N-204, National Institutes of Health, Bethesda, Md. 20014; telephone: (301) 656-4000, Ext. 62021.

The coöperation of physicians is also requested in the referral of patients who have shown evidence of unusual host resistance against the growth of cancer for studies being conducted by the Surgery Branch of the National Cancer Institute at the Clinical Center.

Needed for these studies are patients who have had spontaneous regression of established tumors, prolonged survival following incomplete surgical excision of their cancers, or prolonged remissions following chemotherapy. Sera from these patients will be of particular interest. Upon completion of their studies patients will be returned to the care of the referring physician, who will receive a summary of findings.

Physicians interested in having their patients considered for admission to these studies may write or telephone Dr. Donald L. Morton, Clinical Center, Room 10-N-222, National Institutes of Health, Bethesda, Md. 20014; telephone: (301) 656-4000, Ext. 63013.

Indicator-Dilution Techniques in Cardiovascular Diagnosis

COLONEL ROBERT J. HALL, MC, USA*

WITH THE GROWING COMPLEXITY of cardiovascular diagnostic techniques the referring physician is progressively badgered by technical jargon and reports of procedures which he only poorly understands. While the significance of intracardiac pressures and oxygen saturations usually pose no problem to logical interpretation, the concepts involved and the interpretation of indicator-dilution curves frequently evade the clinical practitioner. We shall summarize briefly, with illustrative cases, the significance and usefulness of indicator-dilution curves.

General Considerations

An "indicator" is a substance which can be safely injected into the circulation at one point and sampled or detected at some other point in the vascular system. One of the early sampling procedures consisted of collecting arterial blood from a needle puncture in test tubes moving on a rotating drum and quantitating the amount of indicator dye present in each by light-absorption techniques. Hence, early indicators were dyes with specific light-absorption characteristics. From these individual concentrations a "time concentration" curve (indicator-dilution curve) could be plotted. Subsequently, withdrawal of arterial blood through a cuvette containing a light source and sensitive photocells permitted an instantaneous recording of the time-concentration curve. It can readily be seen that the indicator, by labeling blood at the injection site, will effectively denote transit time to the sampling site, will give information on different pathways if these be present, and in a more complex fashion will yield information about the size of the central vascular pool and the cardiac output. The quantitative considerations of central volume and output are beyond the scope of this review and will not be further touched upon.

In the intact circulation an indicator injected into the right-heart chambers or venous system will have to pass through the lungs before its

delivery to the arterial detection site by the left chambers. Because of the presence of varying-length routes through the lungs the curve of concentration rises and falls at the arterial site in a modified bell curve (figure 1-A); before the down-slope is completely inscribed some of the fastest traveling particles (those which have taken the shortest possible routes through the pulmonary and systemic circuits) are appearing for the second time as a "recirculation" hump. These are the characteristics of a normal curve.

The presence of a left-to-right shunt (i.e., patent ductus, ventricular septal defect, atrial septal defect) will significantly alter these characteristics. When the particles reach the left side of the circulation 2 alternate pathways are present (figure 1-A); some may pass into the systemic arteries, others will return to the right heart via the shunt. As a result, the curve will achieve less amplitude, and, since a fraction of the particles keep recirculating through the lungs, the down-slope is prolonged and slow. A right-to-left shunt (cyanotic defects) presents 2 alternate routes to the particles at some point in the right-heart circuit (figure 1-A); some particles immediately traverse the defect and appear as a premature deflection, others course through the lungs in the normal fashion inscribing the expected curve of less than normal magnitude.

The technique of right-heart indicator injection is extremely useful during right-heart catheterization in identifying the presence and location of a right-to-left shunt. In a classical case (figure 1-B) of tetralogy of Fallot (combined ventricular septal defect and pulmonary stenosis) indicator-dilution curves with injection into the pulmonary artery and then into the right ventricle confirm the presence of a right-to-left shunt, localize it to the right ventricular level, and, based on the size of the premature deflection, semiquantitate the magnitude of the shunt.

Such simplicity of localization is not afforded in left-to-right shunts. Although injection into the right-heart chambers, with systemic arterial sampling, will give a characteristic curve, this will not identify the location of the shunt. How-

* Chief, Cardiovascular Service, Walter Reed General Hospital, Washington, D. C. 20012.

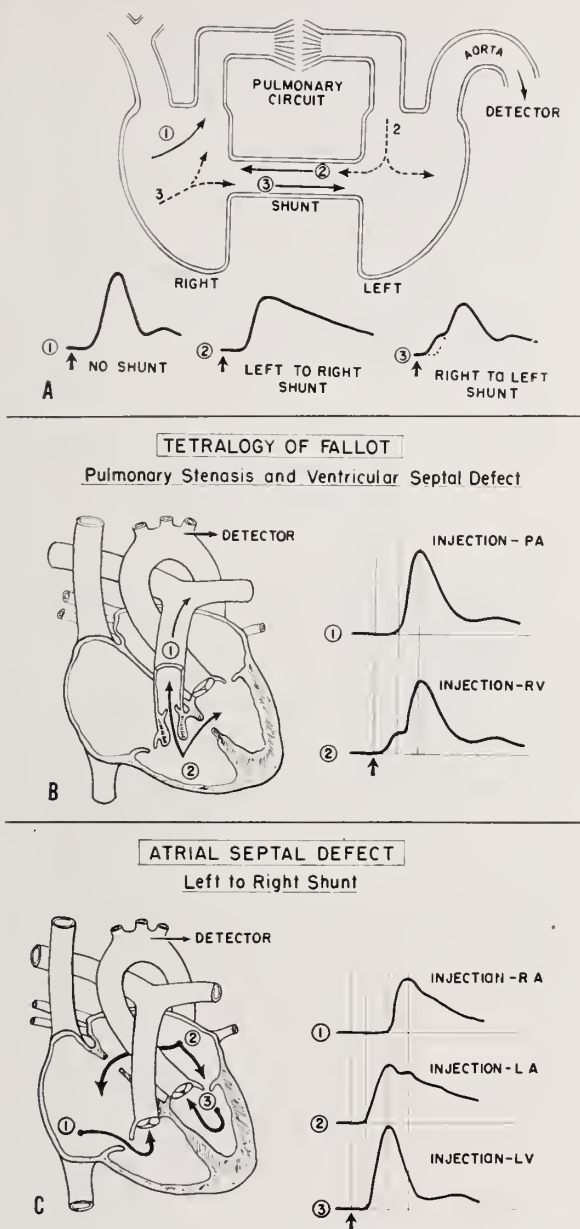


FIG. 1. A. Indicator particle distribution following right-heart injections in 3 differing circumstances. B. Indicator distribution following injection into pulmonary artery (PA) and right ventricle (RV) in a case of tetralogy of Fallot. In the former, only one pathway is permitted; in the latter, particles follow 2 routes, through the PA and the ventricular septal defect. The shunted particles produce the premature "hump" on the resultant dilution curve. C. Indicator distribution following injection into right atrium (RA), left atrium (LA), and left ventricle (LV) in a case of atrial septal defect. The indicator particles can follow only one route when injected into the LV. All other injection sites permit a portion of the particles to have recurrent access to the right circuit, reducing the curve amplitude and prolonging the downslope.

ever, by varying the site of the injection of the indicator and detecting it in the arterial system, such localization is possible. An illustrative case (figure 1-C) with an atrial septal defect and left-to-right shunt reveals abnormal curves from right-atrial and left-atrial injections, but normal curves following left-ventricular injection. This is possible since the left ventricle is the first chamber in this situation from which injected particles can follow only 1 pathway.

Characteristics of Light-absorbing Indicators

In the earlier employment of indicator-dilution curves Evans blue was widely used. This dye has a peak light absorption at a wavelength of 630 millimicrons (figure 2). In addition to long persistence in the body and consequent skin discoloration, the peak light absorption coincides with that of reduced hemoglobin. Hence, changing arterial oxygen saturation is instrumentally

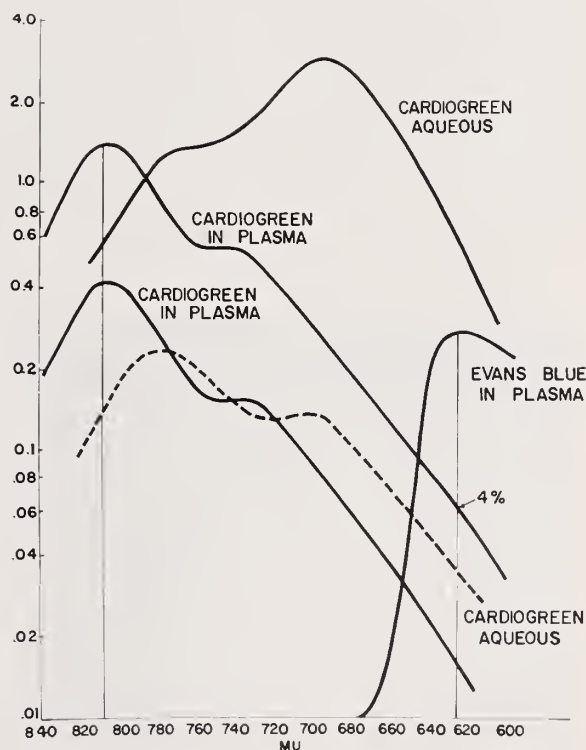


FIG. 2. Light absorption (arbitrary units) plotted on the ordinate and wavelength (millimicrons) on the abscissa for Cardio-Green and Evans blue dyes. Varying concentrations of Cardio-Green in plasma yield comparable shaped curves with peak absorption at 810 mμ. Light absorption is directly related to dye concentration. In aqueous solution the characteristics of Cardio-Green light absorption are variable at differing concentrations. Evans blue in plasma has its peak absorption at 630 mμ.

conflicting with changing Evans blue concentration. For these reasons a search for a better indicator led to the clinical use of indocyanine*, which is rapidly excreted by the liver and has a peak light absorption in plasma or blood at a wavelength of 810 millimicrons. Since at this wavelength (in the infrared spectrum) the light absorption curves of reduced hemoglobin and oxyhemoglobin are identical (isosbestic point), changing oxygen saturation does not affect instrumental detection of indocyanine. Although indocyanine suspension in an aqueous solution yields an unpredictable light-absorption curve in varying concentrations, fortunately its loose but prompt fixation to plasma proteins yields a predictable absorption curve. Variations in concentration are reflected in directly related changes in light absorption (figure 2).

The detection of these indicators is accomplished by the constant withdrawal of blood from the sampling site (arterial needle, catheter, etc.) past a photocell sensitive at the appropriate wavelength (whole-blood cuvette densitometer). For convenience and avoidance of an arterial puncture, an earpiece cuvette (ear oximeter) can be utilized to detect the passage of the dye particles through the capillaries of the heat-flushed ear pinna.

Double-catheter Indicator Techniques

Problems in the localization of the left-to-right shunts, especially those of small magnitude, led to the use of double-lumen or 2-catheter techniques to permit sampling from the right-heart chambers directly. An illustrative case is that of a 34-year-old woman with an atypical murmur of a patent ductus. Right-heart pressures were normal and oxygen step-up at the pulmonary artery level was not diagnostic. By means of a double-catheter technique, injection of indocyanine indicator was made (figure 3-A) into the pulmonary artery with sampling, via the second catheter, first from the pulmonary artery and then from the right ventricle. In this situation the small left-to-right shunt was recognized by the premature appearance of indicator particles in the pulmonary artery. At the right-ventricular sampling site, indicator particles did not appear until they had made a complete systemic circuit and returned via the vena cavae.

* Cardio-Green, a product of Hynson, Westcott & Dunning, Inc., Baltimore, Md.

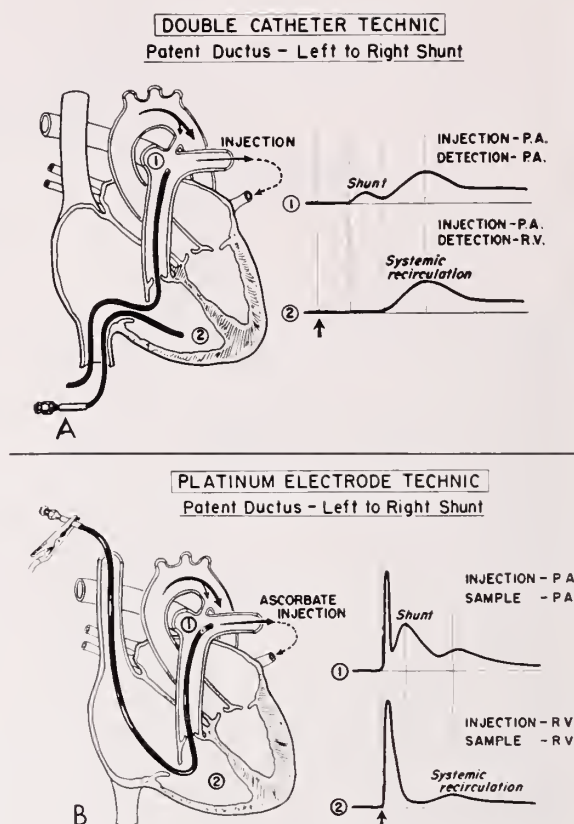


FIG. 3. A. Injection of indocyanine is made for both curves in distal pulmonary artery (injection catheter not shown). Sampling catheter, first located in the PA, detects premature return of indicator particles via patent ductus. When repeated with sampling catheter in the RV, indicator particles are not detected until they traverse the complete circulation. The arrow indicates time of injection. B. Ascorbate-indicator curves recorded from a platinum-tipped catheter, first in the PA and then in the RV. In both the record shows high initial spike as ascorbate is detected by platinum tip at instant of injection. Premature reappearance of ascorbate particles only in pulmonary artery curve confirms diagnosis of patent ductus. Similarity to the more cumbersome double-catheter technique above is evident.

Platinum-electrode Indicator Curves

Shortcomings of a method requiring aspiration of blood from the right-heart chambers via a second catheter or a double-lumen catheter were at once obvious and pointed to the need for a detecting device that could be carried into the right-heart chambers on the tip of a cardiac catheter. Such a device grew out of the work of Clark and Barger¹ with platinum-electrode techniques. Either hydrogen gas administered by single breath inhalation or ascorbic acid by injection via the catheter will serve as an indicator and will produce an electrical potential difference

between a platinum-tipped catheter and a remote indifferent silver electrode which can be readily detected and recorded as an index of changing ascorbate or hydrogen-ion concentration. These curves can readily and repeatedly be recorded from any of the right-heart chambers. Failure of the indicator to reach the detecting site before sufficient time elapses for transit through the systemic circuit signifies absence of a left-to-right shunt. Premature appearance of indicator particles in the right-heart chambers denotes the presence of a shunt. This method has particular advantages in the detection and localization of small intracardiac left-to-right shunts as the following illustrative cases demonstrate.

Illustrative Cases

Catheterization of a 31-year-old woman with a murmur consistent with a small patent ductus arteriosus disclosed normal right-heart pressures and a 4 per cent oxygen step-up from the right ventricle to the pulmonary artery. Platinum-electrode ascorbate-indicator dilution curves demonstrated early reappearance of ascorbate in the pulmonary artery, corroborating a diagnosis of patent ductus (figure 3-B) which was subsequently ligated surgically.

An 18-year-old woman had a grade 3/6 left parasternal, nonpansystolic murmur consistent with a small ventricular septal defect. Two previous catheterizations at ages 3 and 8 had not been diagnostic. Right-heart catheterization disclosed normal pressures and a nondiagnostic, unsustained oxygen step-up at the right ventricular level (figure 4-A). Ascorbate curves proved a shunt at the ventricular level (figure 4-B). Surgery for this small defect was not advised, but appropriate bacterial endocarditis prophylaxis was recommended.

While the place of such a sensitive methodology for the detection of very small shunts is evident, occasionally these techniques facilitate the analysis of more complex lesions.

An 18-year-old male was seen with a history of a murmur from the age of 11 originally considered to be of rheumatic origin. At the age of 13 he was catheterized elsewhere, and an atrial septal defect was suspected but not proven. Physical examination disclosed a normally splitting second sound and a grade 2/6 decrescendo, nonholosystolic, poorly transmitted murmur along the lower left sternal border and toward the apex, suggesting the possibility of a small ventricular defect. Right-heart catheterization (figure 5) immediately disclosed catheter passage into an anomalous vein draining from the left upper lobe into the superior vena cava. Pressures were normal and oxygen data supported a left-to-right shunt at the superior caval level (figure 6-A). There was no further evidence

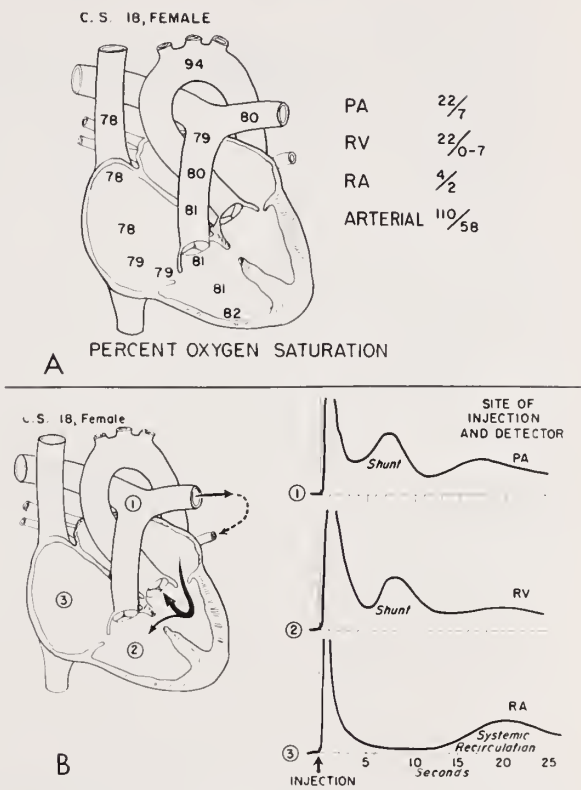


FIG. 4. A. Oxygen saturations and pressures at right-heart catheterization. B. Ascorbate-dilution curves disclose premature reappearance of indicator particles at the RV and PA but not at the RA. These confirm presence of a shunt and localize it to ventricular level.

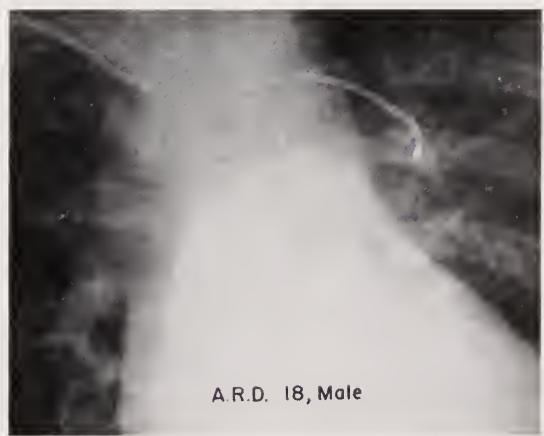


FIG. 5. X-ray film at catheterization revealing passage into an anomalous vein draining left lung into superior vena cava.

of atrial or ventricular septal defects from the oxygen data, but such could not be excluded. Ascorbate curves (figure 6-B) were performed from multiple sites in the right-heart chambers. As illustrated by the superior vena cava injection ascorbate particles reappeared prematurely via the anomalous vein. Likewise, in-

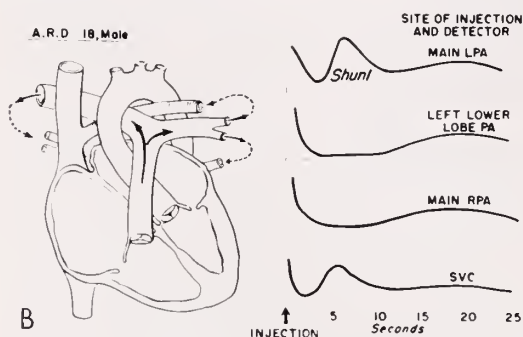
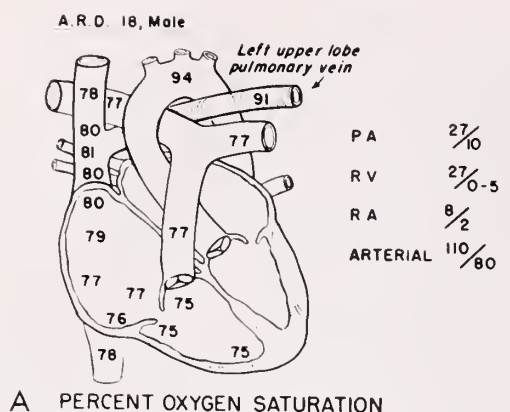


FIG. 6. A. Oxygen saturation and pressure data disclosing an oxygen step-up at low superior vena cava. B. Ascorbate curves recorded from platinum-tipped catheter placed in main left pulmonary artery (LPA), left lower lobe PA, main right pulmonary artery (RPA), and superior vena cava (SVC). Only those injections which give ascorbate access to left upper lobe artery show premature reappearance of indicator particles in right-heart circuit proving isolated left upper lobe anomalous pulmonary venous drainage and excluding other defects of septation.

jection into the left main pulmonary artery permitted ascorbate particles to return prematurely to the right-heart circuit and be detected. Injections, however, into the left lower-lobe pulmonary artery and into the main right pulmonary artery revealed no evidence of early right-heart reappearance but detection of ascorbate only after complete systemic circulation. These 2 curves exclude atrial or ventricular septal defects, since the injected ascorbate followed a normal circuit. Only the left upper-lobe pulmonary artery permitted premature return of the ascorbate indicator to the right heart, proving isolated single-lobe anomalous vein-drainage with intact atrial and ventricular septa. No surgery was advised, and this young soldier was returned to duty with his minor defect. Although either ascorbic acid or hydrogen-indicator curves will identify the presence of a left-to-right shunt, the former can be selectively employed to identify isolated unilateral or lobar anomalous vein drainage as this case demonstrates.

Summary

The fundamentals of indicator-dilution techniques have been reviewed for the practicing physicians intermittently exposed to such data but not working daily in the cardiovascular diagnostic area. The general principles have been outlined and illustrated by selected cases. The utilization of simple yet highly sensitive techniques in the detection and localization of small shunts and clarification of more complex lesions have been exemplified.

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The Iron-Storage Diseases*

LT. COLONEL MARCEL E. CONRAD, MC, USA†

THE TERMS hemochromatosis and hemosiderosis are misnomers which have added confusion rather than clarification to the iron overloading disorders. As with hypertension, the iron overloading disorders should be classified into an idiopathic type in which the basic etiology is unknown and a secondary group associated with demonstrable causes for iron deposition in various portions of the body. In many of these disorders measurements of the iron overloading are needed to establish a diagnosis and prescribe appropriate treatment.

TABLE 1: Classification of the Iron-storage Disorders

1. Idiopathic generalized massive iron overloading (hemochromatosis)
2. Secondary iron overloading diseases (hemosiderosis)
 - A. Generalized and massive siderosis
 1. Transfusional siderosis
 2. Prolonged excessive dietary intake (Bantu, Kaschin-Beck)
 3. Microcytic hypochromic anemia with defective hemoglobin synthesis
 - a. Thalassemia major
 - b. Pyridoxine-responsive anemia
 - c. Sex-linked hypochromic anemia
 - B. Relative and limited siderosis
 1. Polycythemia
 2. Hemolytic disorders
 3. Aplastic anemia
 4. Pancreatic insufficiency
 - C. Focal siderosis
 1. Renal siderosis
 2. Pulmonary siderosis
 3. Laennec's cirrhosis

I am proposing a classification of the iron-overloading disorders and summarizing the clinical and laboratory findings of these diseases (tables 1 and 2).

The total body iron of normal adults is approximately 4 Gm., of which 2.5 Gm. is incorporated into hemoglobin, 1 Gm. is stored in organs of the

reticulo-endothelial system, and the remainder is present in myoglobin, respiratory enzymes and the plasma^{1, 2} (figure 1). This quantity of iron is maintained by a regulated balance between absorption and excretion. Generalized iron-overloading occurs if the quantity of iron entering the body consistently exceeds loss. In contrast, relative or focal siderosis can result in redistribution of body iron. An etiologic diagnosis and the size of the body iron store should be sought in each patient with sus-

IRON METABOLISM

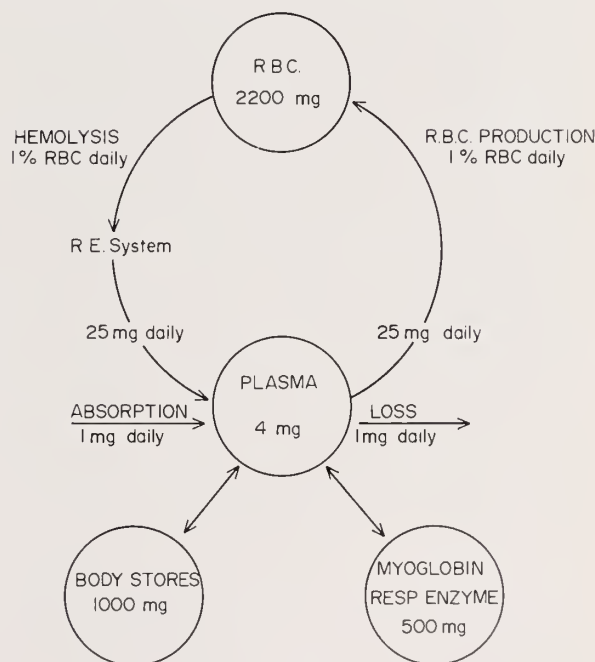


FIG. 1. Schematic diagram of iron balance in normal adult humans. A total body iron of 4 Gm. is maintained throughout adult life by a delicate balance between absorption and loss; a consistent error in either direction would result in either iron deficiency or siderosis. Most body iron is incorporated into circulating hemoglobin, and this quantity of body iron is stabilized by a balance between red blood cell production and destruction. Polycythemia causes an increase in body iron with depletion of tissue stores, whereas aplastic anemia can produce tissue siderosis without alteration of the total body iron. The large quantity of iron in red blood cells makes bleeding an efficient mechanism for producing iron deficiency.

* From the Department of Hematology, Walter Reed Army Institute of Research, and Hematology Service, Walter Reed General Hospital.

† Chief, Department of Hematology, Walter Reed Army Institute of Research and Hematology Service, Walter Reed General Hospital, Washington, D. C. 20012.

TABLE 2: Manifestations of Disorders Associated with Abnormal Iron Storage

Genetics	Clinical Manifestations	Serum Iron	Tot Iron Binding Capacity	Liver	Tissue Iron Stores	Red Blood Cells	Hemolysis	RBC Radioiron Incorporation	Comments
	Cirrhosis	Diabetes	Cordiac		Bone Marrow	Skin & Gut			
Idiopathic Hemochromatosis	++++	+++	++	↑↑↑↑	N	++++	++	↓ ↓	
Transfusional Siderosis	±	±	±	↑↑↑↑	N	++++	+++	↓ ↓	History of massive transfusions
Prolonged Dietary Intake Bontu Koschin Beck	++	±	±	↑↑↑↑	↓	++++	+++	↓ ↓	Polyarthritides & bone deformity
Thalassemia Major	+	+	+++	↑↑↑↑	N	++++	+++	↑↑↑	Retarded growth A2 & fetal Hb
Pyridoxine Resp. Anemia	+	+	++	↑↑↑↑	N	++++	+++	↓ ↓	Response to pyridoxine
Sex-linked Hypochromic Anemia	+	+	++	↑↑↑↑	N	++++	+++	↓ ↓	No response to pyridoxine
Polycythemia	0	0	0	↓ ↓	↑↑	0	0	N	Elevated Hb & RBC mass
Hereditary Spherocytosis	0	0	0	↑	N	++	+++	↓	
Aplastic Anemia	0	0	0	↑↑	N→	+++	+	↓ ↓ ↓	
Renal Siderosis	0	0	0	↓ ↓	↑	0	+++	↓	Urinary hemosiderin plasm Hb & haptoglobin
Pulmonary Siderosis	0	0	0	↓ ↓	↑	0	0	↓	Stain sputo for Fe
Sideroblastic Cirrhosis	++++	±	0	↑↑↑	N→	++++	0	N	

(1) Dependent upon underlying etiology (2) Hypersplenism may be present.

pected iron overloading. An elevated serum iron concentration and siderosis of one organ are insufficient to establish a diagnosis of generalized massive iron overloading. The generalized distribution of excessive body iron should be demonstrated by stains of biopsy specimens from multiple organs such as the skin, stomach, small intestine, bone marrow and liver. The massive nature of the iron overload can be quantitated by bleeding the patient until he becomes iron-deficient; phlebotomy of 1 pint of blood with a normal hemoglobin concentration (15 Gm./100 ml.) depletes the body of 250 mg. of iron (1 Gm. hemoglobin contains 3.4 mg. of iron).²

Every patient with suspected iron-overloading should be questioned about the number of previous blood transfusions and for a family history of anemia, diabetes, cirrhosis, or cardiac insufficiency. Blood relatives should be examined for evidence of anemia or iron-storage disease. The blood of both the patient and his family should be tested for hyperferremia and the presence or absence of microcytic, hypochromic red blood cells.

Idiopathic, generalized, massive iron overloading (hemochromatosis)³⁻¹³ is a familial disorder in which excessive amounts of dietary iron are absorbed and accumulate in various organs of the body to produce tissue damage. Usually, the disease becomes manifest during the fourth to sixth decade of life as cirrhosis, diabetes mellitus, heart failure, or pigmentation of the skin. Hemochromatosis should be suspected in patients with any of these conditions and considered probable if 2 or more of this tetrad coexist. This probability is supported by an elevated serum iron which almost completely saturates the total iron-binding capacity. However, the diagnosis cannot be established with certainty until the massive and generalized nature of the iron overload is demonstrated in patients with normocytic, normochromic red blood cells who have no history of multiple blood transfusions or prolonged and excessive dietary intake of iron.

Although the generalized nature of the iron overload can be established by examination of stained biopsy sections from several organs, I believe iron stains of small intestinal biopsy specimens provide the most reliable information. The lamina propria of the duodenum and jejunum do not contain excessive deposits of stainable iron until the patient has a 10 Gm. body store. Excessive deposits of iron in the skin and gastric mucosa can be found following a hematoma or gastritis. The bone marrow contains relatively

little iron in idiopathic hemochromatosis, and the liver shows excessive deposits of iron in certain patients with Laennec's cirrhosis.

Massiveness of iron overloading is demonstrated by tolerance to repeated phlebotomy; normal subjects develop iron-deficiency anemia following a loss of 2 to 5 liters of blood, whereas most hemochromatotics tolerate a 50 to 100 liter blood loss before they develop a sustained anemia with hypoferremia and depletion of iron from their tissue stores. Energetic phlebotomy should be undertaken to reduce excessive deposits in organs and prevent further tissue damage.

In hemochromatotics under 40 years of age blood-letting should be considered a medical emergency because of the frequency of sudden death from cardiac arrhythmias. In older patients the disease usually becomes manifest as cirrhosis, diabetes, or congestive heart failure. Most hemochromatotics tolerate blood-letting at a rate of 2 or 3 pints weekly. This can be continued until the labile stores have been depleted, when a slower rate of blood-letting must be utilized. The period of vigorous phlebotomy usually removes about three-fourths of excessive iron deposits. Depletion of this readily available iron pool can be detected by the inability to maintain the hemoglobin concentration, the development of reticulocytopenia, and depression of the serum-iron concentration with continued blood-letting. However, excessive quantities of iron are found in tissue specimens, and cessation of phlebotomy is followed by a rapid return of the hemoglobin concentration and serum iron to pre-phlebotomy values. Continued blood-letting at a slower rate permits depletion of the less easily mobilized iron stores. Once this occurs a more prolonged period of iron deficiency ensues and the liver and bone marrow contain no stainable iron.

Some investigators have questioned the efficacy of blood-letting in the treatment of idiopathic hemochromatosis. However, untreated hemochromatotics have a progressive downhill course with death caused by cirrhosis, hepatic carcinoma, diabetes mellitus, or cardiac dysfunction. Conversely, removal of excess iron by energetic phlebotomy produces marked improvement in hepatic, pancreatic and cardiac function within months after its induction and eventual disappearance of histologic evidence of cirrhosis. Iron stores should be maintained at near normal levels for the remainder of the patient's life. Once excessive stores have been depleted this can usually be accomplished by quarterly donations of a pint of blood. The biochemical lesion causing idio-

pathic hemochromatosis has not been identified. Studies of the rate of repletion of iron stores in hemochromatotics indicate that these patients accumulate approximately 3 mg. of iron each day. Thus, the basic defect of this disease causes increased absorption of iron and decreased excretion until a massive store is accumulated. Whether the defect is a generalized abnormality of epithelial cells or a relative inability to utilize stored iron is unknown.

The secondary iron-overloading disorders should be classified into a group in which there is generalized massive siderosis and diseases which are associated with relative, limited, or focal iron overloading. Secondary generalized massive iron overloading occurs following multiple blood transfusions, the injection of excessive quantities of iron, prolonged excessive dietary intake of iron and associated with microcytic hypochromic anemias in which there is a defect in hemoglobin synthesis. Blood transfusion is an important cause of siderosis because each pint of blood contains 250 mg. of iron, and maximal body excretion is limited to a net loss of about 4 mg. daily.^{2, 13} The Bantus have marked tissue siderosis from the ingestion of a diet that contains much iron and alcohol,¹⁴ and in Manchuria generalized siderosis with polyarthritis occurs from an iron-overloaded water supply. Patients with thalassemia major develop massive generalized siderosis, and this is worsened by repeated transfusions of these patients for their anemia.^{15, 16} Cardiac arrhythmias are a frequent cause of death from this disease because of myocardial deposition of iron. The severity of anemia usually prohibits the use of repeated phlebotomy to lessen the iron overload. Parenteral administration of iron chelators has been advocated to deplete the excess iron stores of patients with thalassemia major. The results of large long-term studies are needed to ascertain if this relatively inefficient method of ridding the body of iron is worthwhile in the treatment of thalassemic patients. Usually these patients are easily identified because of their retarded growth, skeletal abnormalities, and a hemolytic anemia with microcytic hypochromic red blood cells. Studies of the parents show thalassemia minor; the trait is unassociated with massive iron overloading because they can increase excretory losses to balance their excessive absorption of iron.¹⁷

Pyridoxine-responsive anemia and a sex-linked hypochromic anemia are associated with a massive generalized iron overload.^{18, 19, 20} Unlike thalassemia these patients do not have evident physical deformity because the disease does not

become manifest until adult life. These disorders are characterized by a microcytic hypochromic anemia without hemolysis, ineffective utilization of iron for hemoglobin synthesis, an elevated serum iron, and tissue siderosis. In some patients large doses of pyridoxine improve the anemia and increase the incorporation of iron into hemoglobin. The presence of anemia usually brings these patients to the physician before marked tissue fibrosis occurs. However, pathologic changes similar to idiopathic hemochromatosis can occur and have been reported to cause death. Patients with pyridoxine-responsive anemia and sex-linked hypochromic anemia usually tolerate phlebotomy at a rate of 1 pint of blood weekly. Blood relatives should be examined for evidence of the disease so that excessive iron can be removed by phlebotomy before tissue damage occurs.

Relative, limited, or focal siderosis produces insignificant changes in the total body iron but marked alteration in the distribution of iron within the body. Limited iron loading is found in polycythemia and many hemolytic disorders because increased absorption of iron occurs in response to accelerated production of hemoglobin. However, once body requirements are satiated, losses keep pace with absorption to prevent accumulation of a massive store.

In aplastic anemia much of the heme-iron from destroyed red blood cells is not reutilized for hemoglobin synthesis. This excess iron is deposited in body stores to cause tissue siderosis without significant change in the total body iron content. Patients with pancreatic insufficiency secondary to chronic pancreatitis or cystic fibrosis develop moderate and limited hepatic siderosis from increased iron absorption. This is probably caused by the absence of pancreatic secretions such as bicarbonate which normally chelates iron to reduce absorption from the lumen of the gut.^{21, 22, 23}

In certain disorders increased amounts of stainable iron are deposited in a solitary organ without an increase in the iron content of other body tissues. This occurs in the kidneys of patients following intravascular hemolysis,²⁴ the lungs in pulmonary hemosiderosis,²⁵ and in the liver of certain patients with Laennec's cirrhosis. Patients with Laennec's cirrhosis and limited or focal siderosis may be difficult to distinguish from disorders in which there is massive generalized iron overloading. The liver of certain cirrhotics contains large quantities of stainable iron. In addition, the serum iron may be markedly elevated with a bone marrow that contains many sidero-

blasts. However, biopsy specimens from other organs such as the skin, the stomach, or the small intestine show normal quantities of stainable iron, indicating that the iron overload is not generalized. That the iron store is not massive can be shown by bleeding these cirrhotics until they become iron-deficient and their liver is depleted of stainable iron; usually iron deficiency is induced by phlebotomy of 10 pints of blood. The etiology of focal iron overloading in certain cirrhotics is worthy of comment. Many red blood cells containing siderin particles are produced by the bone marrow of these patients. Shortly after these cells are delivered into the circulation the spleen removes the siderin from intact erythrocytes to cause accelerated iron turnover and an elevated plasma iron concentration with excessive deposition of iron in the liver.^{26, 27}

The other forms of focal siderosis are usually not confused with generalized massive iron overloading. Renal siderosis is caused by hemoglobinemia, and pulmonary siderosis occurs from bleeding into the lung. Sequestration of iron in the kidney or the lung and loss of iron in the urine or sputum deplete other tissues of iron and cause changes suggestive of iron deficiency rather than iron overloading.

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Malaria: Present Concepts of Treatment

COLONEL RAYMOND W. BLOHM, JR., MC, USA*

TO MOST AMERICAN PHYSICIANS malaria is an uncommon disease. It is seldom emphasized in medical schools or hospitals, and a patient with it is usually presented as a curiosity at a grand rounds or an unusual case conference. Periodically, wars necessitating military personnel to serve in malaria-endemic areas again expose both military and civilian physicians to the reality of malaria as a not uncommon and often serious infection. Similarly, such organizations as the Peace Corps now serve in areas where malaria has not been eradicated. American businessmen and tourists in increasing numbers travel to all areas of the world. Today, rapid air travel permits diseases such as malaria to be observed in the United States in increasing numbers.

The increased incidence of malaria in the United States is well documented.¹ Tables 1 and 2 from the Morbidity and Mortality Report of April 15, 1967 of the National Communicable Disease Center illustrate the increasing incidence and the etiologic species involved.

TABLE 1: Malaria Cases Occurring in the United States, 1962-1967*

Year	Military	Civilian	Annual Total
1962	75	44	119
1963	58	90	148
1964	52	119	171
1965	51	105	156
1966	563	115	678
1967*	712	10	

* Reported cases through April 17, 1967.

A later report² from the same source confirms the continued increase for 1967 through July 20 to a total of 1,355 cases. Of these, 39 cases were in civilians, the remainder being in military personnel. The military cases occurred almost exclusively in recent returnees from Southeast Asia, mainly South Vietnam.

Three malaria plasmodia species occur in South Vietnam: *P. falciparum*, *P. vivax*, and *P. malariae*.

* Assistant Chief, Department of Medicine, Walter Reed General Hospital, Washington, D. C. 20012; formerly Medical Consultant to U. S. Army in Vietnam, June 1966-June 1967.

Late in 1965 when combat troops were first committed to the Vietnam highlands, falciparum malaria, often resistant to standard chloroquine treatment, was encountered. Quinine was found satisfactory for the acute attack, but recrudescences were common after completion of quinine or quinine-chloroquine combination treatment. The once weekly chloroquine-primaquine tablet containing 300 mg. of chloroquine base and 45 mg. of primaquine base, very effective in protection against vivax malaria unless overwhelming inoculation by infected mosquitoes has occurred, gave little evidence of protection against, or suppression of the particular strains of falciparum malaria encountered.

TABLE 2: Causative Plasmodium Species of Malaria Cases in the United States, 1966-1967*

Species	1966		1967*	
	Number	Per cent	Number	Per cent
<i>P. vivax</i>	382	60.1	588	84.2
<i>P. falciparum</i>	221	34.7	95	13.6
<i>P. malariae</i>	12	1.9	3	0.4
<i>P. ovale</i>	13	2.0	1	0.1
Mixed infections	8	1.3	12	1.7
All cases	636	100.0	699	100.0

* Reported cases through April 17, 1967.

After initial infection malaria is generally considered for treatment purposes as either erythrocytic (where parasitism is perpetuated only in the red blood cells) or exo-erythrocytic (where, in addition to red blood cell parasitism, there is a chronic parasite phase in the reticuloendothelial system, primarily in the liver, which, if not eradicated, is the source of recurrent malaria). Falciparum malaria is generally acknowledged as the only pure erythrocytic type while vivax, malariae, and ovale species cause the exo-erythrocytic type.

Drug treatment in the exo-erythrocytic type is aimed at both the corpuscular and extracorporeal phases, with chloroquine curing the corpuscular phase and primaquine the extracorporeal phase. Treatment of the exo-erythrocytic type of malaria in American servicemen has not been a major problem.

Uncomplicated, nonresistant falciparum ma-

laria—since there is no exo-erythrocytic phase—is ordinarily cured with a course of chloroquine. However, strains of chloroquine-resistant falciparum malaria have now been reported from many areas of the world with some strains resistant to all common antimalarials but quinine,³ and even quinine has been questioned.⁴ The problems of the U. S. Army in Vietnam in late 1965 and 1966 with large numbers of chloroquine-resistant falciparum malaria cases, challenging both therapy of the acute cases and prevention of recrudescences, are aptly described by Sheehy⁵ and Sheehy and Reba.⁶ Quinine was found to be the most effective and rapid schizonticide, but recrudescences were common if it was used alone or with chloroquine. Trials of various antimalarial drugs, singly and in combinations, were made in order to effect a safe, radical cure of chloroquine-resistant falciparum malaria with minimum recrudescence. Pyrimethamine, by inhibiting folic acid reductase and impairing folate metabolism of the organism, is effective as a schizonticide but slow in action when used alone. All sulfonamides have schizonticidal action, apparently by interfering with utilization of aminobenzoic acid in the plasmodial synthesis of nucleotides. Pyrimethamine and sulfonamides potentiate each other. It has been evident that quinine and pyrimethamine also have additive effect when combined in therapy. A long-acting sulfonamide, sulformethoxine, with a half-life of 100 to 200 hours in man, was also tried in combination with other drugs because of the simplicity of a single dose in treatment and was effective but otherwise had no therapeutic advantage over other sulfonamides. These trials, results, and mechanisms are reported by Sheehy⁶ and Bartelloni.⁷ The sulfone, diaminophenylsulfone (DDS), whose action apparently is also in interference with folic acid metabolism of the Plasmodium, has been tried extensively in South Vietnam and is now used both as a chemoprophylactic agent against falciparum malaria and in combination treatment with quinine and pyrimethamine.

The 2 basic drugs used in therapy of falciparum malaria in South Vietnam during 1966 and early 1967 that proved to be an effective and rapidly acting combination course of treatment were quinine sulfate, 650 mg., 3 times daily for 14 days, and pyrimethamine, 25 mg., 3 times daily for the first 3 days. When a third drug, sulfadiazine, sulfisoxazole, sulformethoxine, or DDS was added to this combination therapy, further improvement in the radical cure rate resulted. My own experiences⁸ are illustrated in table 3.

Experiences over the last year with quinine, pyrimethamine, and DDS (Dapsone®, 25 mg. daily) have given excellent results but have been accompanied by significant side-effects in approximately 0.5 per cent of cases.⁹ These untoward effects included anemia, leukopenia, thrombocytopenia, pancytopenia, or combinations of several of the foregoing. Rarely were these of more than a temporary nature with rapid recovery upon the withdrawal of the drugs. All drugs concerned in our combination treatments have been indicated singly in hematopoietic disturbances. The scarcity of hematopoietic disturbances in our many thousands of troops taking daily DDS prophylactically for the past year left us less concerned with DDS's role in these reactions.

Further experiences led us to believe that shortening the period of quinine treatment and reducing the amount of pyrimethamine would not alter our recrudescence rate and might possibly reduce the hematological side-effects of the drugs.

TABLE 3: Recrudescence Rate with Combination Courses of Treatment*

Quinine and Pyrimethamine		Quinine, Pyrimethamine, and DDS	
Patients	Recrudescences	Patients	Recrudescences
326	24 (7.4%)	474	14 (3.0%)

* All patients responded to initial treatment.

Therefore the primary drug regimen for the treatment of chloroquine-resistant falciparum malaria in Army troops in Vietnam consists of: quinine 650 mg. 3 times daily for 10 days; pyrimethamine, 25 mg. twice daily for 3 days; Dapsone, 25 mg. daily from the first day for a minimum of 28 days. While treatment for, and convalescence from falciparum malaria take place, prophylaxis against vivax malaria must be continued by the weekly C-P tablet (containing 300 mg. of chloroquine base and 45 mg. of primaquine base) or a minimum of 300 mg. of chloroquine base weekly. If this is not continued, it is not uncommon for a suppressed vivax malaria to become clinically active during treatment for, or convalescence from falciparum malaria.

Species identification is all important, of course, and blood smears must be carefully checked for correct species at which to direct therapy. One should never stop looking after identifying one parasite, since mixed infections may occur in 1 to 2 per cent of malaria patients.

Vivax malaria is the most common malaria being seen in the United States. This and the

other exo-erythrocytic *Plasmodium malariae* infections are readily treated by the conventional therapy consisting of 1,500 mg. of chloroquine base over a 3-day period and primaquine base, 15 mg. daily for 14 days.

All Army personnel leaving Vietnam are given 8 weeks' supply of the prophylactic C-P tablets with instructions to take 1 weekly until they are used up. All Army combat personnel who served in the endemic falciparum malaria areas are also given 28 days' supply of Dapsone to take, 25 mg. daily (1 tablet) until they are gone. This is a continuation of the same military program followed while they were in Vietnam. Occurrence of clinical malaria from a suppressed infection may happen after this time, but conscientious adherence to the program for these specified periods after leaving Vietnam should eradicate most suppressed infections.

Realistically, it is apparent, however, that with over 300,000 personnel returning to the United States from Vietnam each year many physicians may soon have contact with veterans or military personnel on leave who may be ill with malaria. Any febrile or acute illness in a serviceman who has returned within 3 months from Vietnam is potentially malaria, and the gravity and seriousness of falciparum malaria must not be underestimated. Likewise, falciparum malaria from Southeast Asia may be chloroquine-resistant, and therapy must be directed with that presumption for such acutely- and seriously-ill patients needing prompt and adequate therapy. Seriously-ill falciparum malaria patients with cerebral manifestations, severe hemolysis, marked parasitemia, and severe gastrointestinal symptoms are candidates for immediate, carefully observed, intravenous quinine therapy.

Intravenous quinine hydrochloride, 650 mg. in 300 c.c. of normal saline solution by intravenous drip over an 8-hour period is the usual dose. For rapid emergency treatment 650 mg. of quinine may initially be given faster but never in less than a 1-hour period. Total intravenous quinine dosage for any 24-hour period should not exceed 1,950 mg. (30 grains). Administration should be slow in order to avoid hypotension. Oral quinine should be started as soon as the patient's condition permits. Intramuscular chloroquine base, 200–300 mg. in 5.0 ml. of sterile distilled water, is also recommended every 8 hours while the patient's condition is critical and only parenteral therapy can be given. This is also recommended for the

severe or comatose cerebral malaria case. If renal shutdown is present or appears imminent with oliguria, quinine dosage should be reduced to one-third or one-fourth of the standard dose, serum quinine levels checked if available, and frequent electrocardiograms performed. Cerebral malaria may often require corticosteroids in addition to the antimalarials.

Summary

Falciparum and vivax malaria are endemic in Vietnam, and these infections are being seen in increasing numbers in returning servicemen from Southeast Asia despite the availability and recommended use of suppressive and prophylactic drugs.

The exo-erythrocytic-type malarias from *Plasmodium vivax* and *Plasmodium malariae* rarely cause problems in therapy with the conventional treatment of chloroquine base, 600 mg. stat (600 mg. chloroquine base equal 1,000 mg. chloroquine phosphate, Aralen®) followed by 300 mg. base in 6 hours, and then by 300 mg. of base on the second and third days. Primaquine base, 15 mg., is started on the first day of treatment and continued daily for 14 days. Less than 1 per cent of vivax malaria should relapse with this treatment. When it does recur, each such attack should be treated similarly.

Species identification is imperative because of the potential gravity of falciparum malaria infection and the fact that it is possibly chloroquine-resistant. Because of this, any patient seriously ill with an unidentified species of malaria should be treated with quinine until identification is resolved. Early treatment definitely protects against serious complications in falciparum malaria. At present the experience of the Army Medical Service in South Vietnam dictates a regimen consisting of quinine sulfate, 650 mg. t.i.d. for 10 days; pyrimethamine, 25 mg. b.i.d. the first 3 days; and Dapsone, 25 mg. for 28 days. With this regimen, rates of recrudescence and untoward drug effects should be minimal. Unfortunately, neither Dapsone nor sulfoxazine are yet approved for commercial release in the U. S. Therefore, I suggest using the 2-drug regimen of quinine sulfate, 650 mg. t.i.d. for 10 days, and pyrimethamine, 25 mg. b.i.d. the first 3 days. When recrudescences occur, the addition of sulfisoxazole, 500 mg. q.6 h. for 5 days, to the 2-drug regimen may decrease the chances of recrudescence.

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Esophageal Motor Disorders: A Clinical Spectrum

CAPTAIN NELSON P. TRUJILLO, MC, USA,* MAJOR ROBERT L. SLAUGHTER, MC, USA,† AND
LT. COLONEL H. WORTH BOYCE, JR., MC, USA‡

THE ESOPHAGUS is a long muscular tube. Its function is to transport a bolus from the hypopharynx to the stomach. This is accomplished by progressive orderly contractions of its muscular wall initiated by swallowing (primary peristalsis). Distention of the esophagus may also initiate progressive orderly muscular contractions (secondary peristalsis). These progressive muscular contractions are propulsive. Initiation of peristalsis is accompanied by reflex relaxation of the lower esophageal sphincter. Another type of localized muscular contraction occurs which is nonpropulsive (tertiary contractions).

Variations from the orderly progression of muscular contraction will produce a disordered esophageal motility. The clinical picture of patients with esophageal motor disturbances varies from no symptoms to those of severe dysphagia, pain, or both. The following cases illustrate this spectrum.

Report of Cases

Case 1. A 63-year-old woman complained of episodes of severe substernal pain radiating to the back, occurring at any time, for approximately 1½ years. She also complained of minimal pyrosis. There was no dysphagia. Physical examination was normal. The swallowing time was normal (8 sec.). An electrocardiogram was normal. An upper gastrointestinal series demonstrated the presence of a small, sliding-type hiatal hernia. Esophagoscopy was within normal limits. An acid perfusion study was negative. Esophageal manometry demonstrated the presence of simultaneous and repetitive contractions throughout the esophagus following an initiated swallow, diagnostic of diffuse esophageal spasm. She had repeated dilations up to no. 60 French Hurst dilators with improvement. Her spasms occur about once a month at the present time. She obtains prompt relief by taking anticholinergics.

Case 2. A 47-year-old man complained of inability to swallow. He stated that 24 hours prior to being seen, while eating a steak meal, he became unable to swallow anything, including saliva. Since then he had vomited or regurgitated everything that he tried to swallow. He denied any previous pyrosis or dysphagia. Occasionally while drinking very cold liquids he had a feeling of tightness in his chest. Physical examination was unremarkable with the exception of absent



FIG. 1. Distal esophagus in case 2 demonstrating a hiatus hernia and "curling" or tertiary contractions of the distal esophagus.

* Assistant Chief, Gastroenterology Service, Department of Medicine, Walter Reed General Hospital, Washington, D. C. 20012.

† Resident in Gastroenterology, Department of Medicine, Walter Reed General Hospital.

‡ Chief, Gastroenterology Service, Department of Medicine, Walter Reed General Hospital.

swallowing sounds. Barium swallow showed complete obstruction of the esophagus at the level of T-10. The esophagus was somewhat dilated proximal to this area. After spontaneous relief of the obstruction an upper gastrointestinal series showed a hiatal hernia and tertiary contractions of the esophagus (figure 1). Esophagoscopy revealed a sliding-type hiatal hernia without esophagitis or stricture. An acid perfusion study of the esophagus was negative. Esophageal manometry studies were diagnostic of diffuse esophageal spasm. Almost all esophageal contractions following an initiated swallow occurred simultaneously throughout the entire length of the esophagus, but a few normal progressive peristaltic contractions were present. The simultaneous contractions were often of increased amplitude (greater than 80 mm. Hg) and duration (20-25 sec.). This increased amplitude

mately 40 pounds of weight. The only pertinent physical findings were obesity and a prolonged swallowing time (15 sec.). An upper gastrointestinal series showed a hiatal hernia with tertiary contractions and hold up of barium in the esophagus. Esophagogastrosocopy revealed a hiatal hernia without esophagitis or stricture. Esophageal manometry demonstrated the presence of synchronous contractions throughout the esophagus and normal relaxation in the distal high pressure zone. An acid perfusion study was negative. Administration of 3 mg. of Mecholyt® produced a rise in baseline esophageal pressure. Progressive dilations to no. 58 French Hurst dilators resulted in no improvement. A barium swallow done after administration of $\frac{1}{100}$ grain of nitroglycerin sublingually showed complete emptying of the esophagus with disappearance of the



FIG. 2. A. Selections from the motility record of case 2. Open-tipped water-filled manometers were used for pressure recordings. There is simultaneous onset of peristaltic contractions throughout entire length of body of esophagus. Contractions within distal esophagus (40-42 cm. from incisor teeth) are much higher in amplitude and duration than those in the mid- and proximal esophagus. B. Relaxation of distal high pressure zone is noted at 47 cm. from incisor teeth.

of contractions was more marked in the distal esophagus. There was normal relaxation of the distal esophageal high-pressure zone (figure 2). It was suggested to the patient that he elevate the head of the bed, lose weight, chew food thoroughly, and avoid extremely hot and cold liquids. He has done well since.

Case 3. A 79-year-old white woman complained of progressive difficulty in swallowing for 6 to 8 months. Her dysphagia occurred with both solids and liquids. She also complained of pyrosis. She had lost approxi-

dysphagia. She has been treated with sublingual nitroglycerin prior to meals with improvement.

Case 4. A 24-year-old man gave a history of dysphagia for 2 years. Since 1965 he had noted a sensation of food sticking in his chest. He had no change in symptoms but noted occasional regurgitation of food. There was no pyrosis and no difficulty during recumbency. The dysphagia occurred with both solids and liquid foods. Physical examination was unremarkable except for absent swallowing sounds. Barium



FIG. 3. Barium swallow in case 4 demonstrating dilated esophagus, barium-air fluid level, and conical narrowing of distal esophagus.

swallow revealed a large dilated esophagus with a conical narrowing of the distal segment of the esophagus as it crossed the diaphragm (figure 3). At esophagoscopy, a dilated lumen, tertiary contractions, normal mucosa, and a puckered stoma at the end of the esophagus were noted. These findings were compatible with achalasia. Esophageal motility study showed absent peristaltic contractions throughout the esophagus. Mecholyl (8 mg. subcutaneously) produced a marked rise in baseline pressure and abnormal contractions of the esophagus (figure 4). The patient developed regurgitation and substernal chest pain. He was treated with pneumatic bag dilation of the cardio-esophageal junction with complete resolution of symptoms.

Case 5. A 44-year-old Negro male sergeant had noted for 8 months prior to admission that food began to hang up in his lower retrosternal region. He noted dysphagia with both solids and liquids and had lost 30 pounds of weight. Physical examination was normal except for a swallowing time of 45 seconds. Upper gastrointestinal series revealed a markedly dilated esophagus with a narrow terminal esophageal segment and a hiatal hernia (figure 5). A large dilated esophagus with marked esophagitis and the presence of a hiatal hernia were demonstrated at esophagoscopy. Biopsy of the distal esophagus revealed chronic esophagitis.



FIG. 4. Selections from the motility record of case 4. Initial portion of tracing shows complete absence of esophageal peristalsis following initiated swallows, the only pressure change being due to respiration. Second portion of tracing begins 1 minute and 15 seconds after intramuscular injection of 8 mg. of Mecholyl. There is an abnormal response of the esophagus to Mecholyl with marked discordant simultaneous and tetanic contraction of the esophagus, during which time the patient experienced chest pain and regurgitated esophageal contents.



FIG. 5. Barium swallow in case 5 demonstrating dilated proximal esophagus and narrow distal esophageal segment.

Esophageal manometry showed normal progressive primary peristaltic waves except for occasional simultaneous contractions (figure 6). Administration of 8 mg. of Mecholyl failed to produce any changes in esophageal motility. Dilation with a no. 60 French Hurst bougie was carried out. There was improvement with disappearance of the dysphagia.

Discussion

Diffuse esophageal spasm is a syndrome characterized by the findings of "curling" or tertiary waves on barium swallow and of simultaneous, often repetitive, spontaneous contractions of the esophagus during motility studies.¹ The absence of "curling" on a barium swallow should not exclude the diagnosis. Patients with this disorder may complain of pain and dysphagia. Some are asymptomatic.

Esophageal spasm may produce severe pain in the chest as in our first case. At times it may closely mimic the pain of angina pectoris. Differentiation of symptoms from esophageal and coronary artery disease is of importance and often difficult on clinical grounds alone. Endoscopy, acid perfusion of the esophagus, esophageal mo-

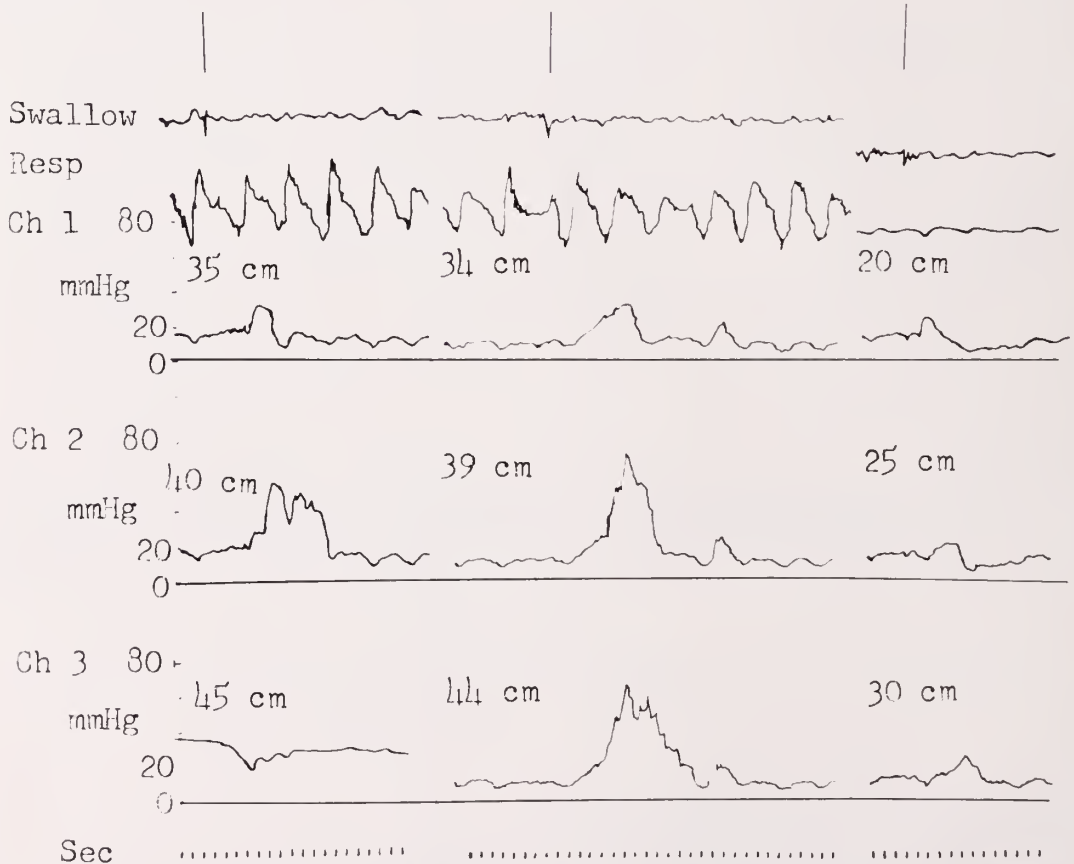


FIG. 6. Selections taken from motility record of case 5. Peristaltic contractions are progressive and normal in appearance except for 1 small-amplitude, simultaneous contraction in midportion of tracing. Normal relaxation of distal high pressure zone is noted at 45 cm. from incisor teeth.

tility, and concomitant electrocardiographic monitoring may permit accurate diagnosis. If the patient's symptoms are induced by acid perfusion or associated with esophageal motor abnormalities while the electrocardiogram remains unchanged, there is good evidence that symptoms are referable to the esophagus rather than the heart.² However, it is virtually impossible to completely exclude coexisting coronary artery disease.

Case 2 complained of inability to swallow. There was no evidence of organic obstruction or esophagitis. Subsequent studies demonstrated the presence of altered esophageal motility and a hiatal hernia on barium swallow. Esophageal motility studies showed a lack of progressive peristaltic waves and the presence of simultaneous high-pressure waves throughout the entire esophagus. The findings on barium swallow and esophageal motility studies are similar to those in esophageal spasm. He has had no symptoms except for the single episode of esophageal obstruction.

Sealy and Carver³ reported episodic aphagia as the presenting symptom in 22 of 51 patients with hiatal hernia. These authors failed to find organic narrowing or esophagitis as the cause of symptoms, but studies of esophageal motility were not included.

Why should some patients with esophageal spasm be asymptomatic while others complain of pain or dysphagia? The answer is not known. Some explanation has been given by Roth and Fleshler⁴ who studied 16 patients with esophageal spasm, 7 of whom complained of dysphagia alone. They found that esophageal emptying was adequate in the presence of large spastic waves if the peaks of pressure were distally sequential. Emptying was inefficient when the pressure peaks occurred irregularly.

The response of the esophagus to Mechohyl in case 3 is interesting. Similar response to Mechohyl in diffuse esophageal spasm has been reported by Kramer et al.⁵ These authors also recorded the transition from diffuse spasm to achalasia in 1 patient.⁶ This suggests that the 2 conditions may be related. Perhaps esophageal spasm is a precursor to the atonic esophagus of achalasia.

Our fourth patient has achalasia, an esophageal disorder characterized by the absence of normal peristalsis and failure of relaxation of the lower esophageal sphincter, producing a physiologic obstruction of the distal esophagus. Absence or diminution in cells of the myenteric nerve plexus has been thought by some to be responsible for these changes. Further support of this theory has

been obtained from the demonstration by Kramer and Ingelfinger⁷ of augmented abnormal contractions of the esophagus of these patients following the administration of cholinergic drugs (Mechohyl).

The diagnosis of achalasia is based on demonstration of a dilated esophagus with a distal symmetrical conical narrowing on barium swallow, the absence of organic obstruction at esophagoscopy, the absence of primary peristaltic waves, and failure of relaxation of the lower esophageal sphincter during esophageal motility studies and Mechohyl-induced tetanic contraction of the esophagus.

A group of patients have been described recently who had a clinical diagnosis of achalasia. They all had a dilated esophagus and profound esophageal dysfunction. Esophageal motility studies demonstrated the presence of primary peristalsis or lower esophageal sphincter relaxation or both, but the frequency of their occurrence was less than normal. Only 2 of the patients had a positive Mechohyl test. The term "pseudo-achalasia" was used for these cases since they continued to exhibit some features of normal function.⁸

Although our case 5 may have "pseudo-achalasia," it is likely that a hiatal hernia had produced esophagitis and a stricture with secondary esophageal dilatation. The prompt relief following dilation with mercury-weighted bougies is in keeping with this diagnosis.

It is interesting to speculate whether the disorders in these patients constitute different phases of the same disease and whether the disorder progresses in an orderly fashion from asymptomatic patients with roentgenographic and motility evidence of diffuse spasm to those who are symptomatic but have a negative response to Mechohyl, to those with a positive response to Mechohyl, and, finally, to typical achalasia.

The complete evaluation of patients with motor abnormalities of the esophagus must include several diagnostic techniques now available to the physician. Roentgenographic studies allow visualization of the organ and assessment of its dimensions, motility, and the presence of organic lesions. Endoscopy permits close scrutiny of the mucosa and biopsy of suspicious areas. Alterations of the propulsive mechanism and the presence of abnormal contractions may be detected by esophageal motility studies. The response of the esophagus to noxious stimuli can be evaluated by the acid perfusion test.⁹

The clinician must not only exclude significant organic lesions but ascertain whether the motor

dysfunction is producing symptoms, since symptomatic relief can usually be obtained only by properly directed therapy.

If a hiatal hernia is present or it appears from endoscopic study or acid perfusion that gastroesophageal reflux may be triggering symptoms, a vigorous program to minimize reflux and protect the esophageal mucosa should be instituted. In some patients painful esophageal contractions may be alleviated by anticholinergics. This is the exception rather than the rule. The smooth-muscle relaxing properties of nitroglycerin and the topical anesthetic action of Oxaine® and 2 per cent viscous Xylocaine® may be of occasional assistance in the treatment of patients with diffuse spasm. Distal esophageal dilation either by bougies or by pneumatic bag may also be of benefit. The latter technique probably helps by disrupting the esophageal muscle fibers.

Although good results have been reported following long esophagomyotomies, the place of surgical intervention in these disorders remains to be determined.¹⁰

The therapy for achalasia is unphysiologic, since it is directed at disrupting the muscle fibers of the only segment of the esophagus that is normal (the lower esophageal sphincter). However, relief of symptoms is usually attained. The treatment consists of forceful dilation of the cardioesophageal junction.¹¹ If there is failure to respond to multiple proper dilations under fluoroscopic control, surgical intervention with slitting of the muscle fibers of the distal esophagus (Heller's esophagomyotomy) is indicated. Surgery is rarely needed if dilation has been properly performed.

Summary

Esophageal motor disturbances are characterized by alterations of the propulsive mechanism of the esophagus. Patients with these disorders present a varying clinical picture. Some are asymptomatic while others may have disabling dysphagia or pain or both. Five cases have been presented to illustrate this spectrum. The etiology, diagnosis and treatment of these disorders have been discussed.

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Holt-Oram Syndrome

Report of Three Cases

CAPTAIN HAROLD H. SHIVELY, MC, USA,* AND MAJOR JOSEPH W. EDGETT, JR., MC, USA†

IN 1960 Drs. Mary Holt and Samuel Oram of King's College Hospital investigated and reported on a familial example of skeletal malformations affecting the hands and associated with a cardiovascular anomaly, namely, atrial septal defect.¹ These cases were thought to be unusual in that the means of inheritance, in contrast to the usual recessive pattern of congenital heart disease,² appeared to be dominant. Dr. Victor McKusick³ in 1961 referred to this syndrome as "atriodigital dysplasia" when he described a family with these associated defects. Single family cases have been reported by Zetterqvist,⁴ Kuhn et al.,⁵ and Lewis,⁶ and 2 separate families were described by Holmes.⁷ Massumi and Nutter⁸ reported 2 families evidencing the syndrome with 2 other single sporadic cases representing probable formes frustes of the syndrome. In addition, there has been a description of an association of the Duane syndrome (an hereditary ocular muscle dysfunction) with the Holt-Oram syndrome⁹ in a single family.

These cases are of interest to the cardiologist, geneticist and pediatrician, as well as to the orthopedist who may be the first to discover a case of the Holt-Oram syndrome because of the obvious skeletal deformity which prompts the parents to seek medical attention. It is currently recognized that radial skeletal defects (including anomalies of the thumb) are quite often associated with anomalies of the cardiovascular system. These patients afford the geneticist the case material with which to study the means of inheritance. The case material directs his attention to the problem of the increase in incidence of genetically responsible congenital anomalies due to genetically defective individuals now living to reproduce offspring.

Below is a study of a family evidencing the cardiovascular and skeletal anomalies first mentioned by Holt and Oram.

Report of Cases

Case 1. A 42-year-old Caucasian woman was found at birth to have bilateral hypoplastic thumbs and an enlarged heart on a routine chest roentgenogram at the age of 16 years. When referred to her local physician a heart murmur was noted. A febrile illness occurred at the age of 15 years associated with joint pains and necessitating confinement in bed for a period of 4 weeks. The patient subsequently resumed normal activity and has remained asymptomatic, from a cardiovascular standpoint, all her life. She has given birth to 3 children without difficulty. Two of her children have the typical skeletal abnormalities associated with the Holt-Oram syndrome and will be described below. She has a normal-appearing 11-year-old daughter who does not manifest any of the skeletal or cardiovascular anomalies of the patient or her 2 sons.

The family pedigree is shown in figure 1. There are no known skeletal or cardiac abnormalities in either her family or her husband's family for the past 3 generations. Both she and her husband are of Pennsylvania Dutch descent and were born and raised within a 25-mile radius of each other. The majority of the members of both families have always lived within this small geographical area.

The patient's pertinent findings are confined to the cardiovascular and skeletal systems. The blood pressure was 120/60. The heart showed the point of maximal intensity (PMI) to be in the fifth left intercostal space 2 cm. to the left of the midclavicular line. Precordial activity was normal. The first heart sound was of normal intensity and the second sound remained split through all phases of respiration. There was no diastolic flow rumble. A grade II/VI systolic ejection murmur was present at the second left intercostal space parasternally. There was a moderate to severe pectus excavatum deformity of the anterior chest wall. Upper extremity skeletal anomalies included loose joint motion in both shoulder joints. The range of motion of the elbow joints was restricted, with a 20-degree limitation of full extension. There was also a limitation in ability to pronate and supinate the forearm. Hypoplastic thumbs were present on both hands, with the thumb on the left hand originating from the metacarpophalangeal joint and the thumb on the right hand originating from the middle of the metacarpal bone (figure 2).

* Resident in Internal Medicine, Department of Medicine, Walter Reed General Hospital.

† Assistant in Cardiology, Department of Medicine, Walter Reed General Hospital, Washington, D. C. 20012.

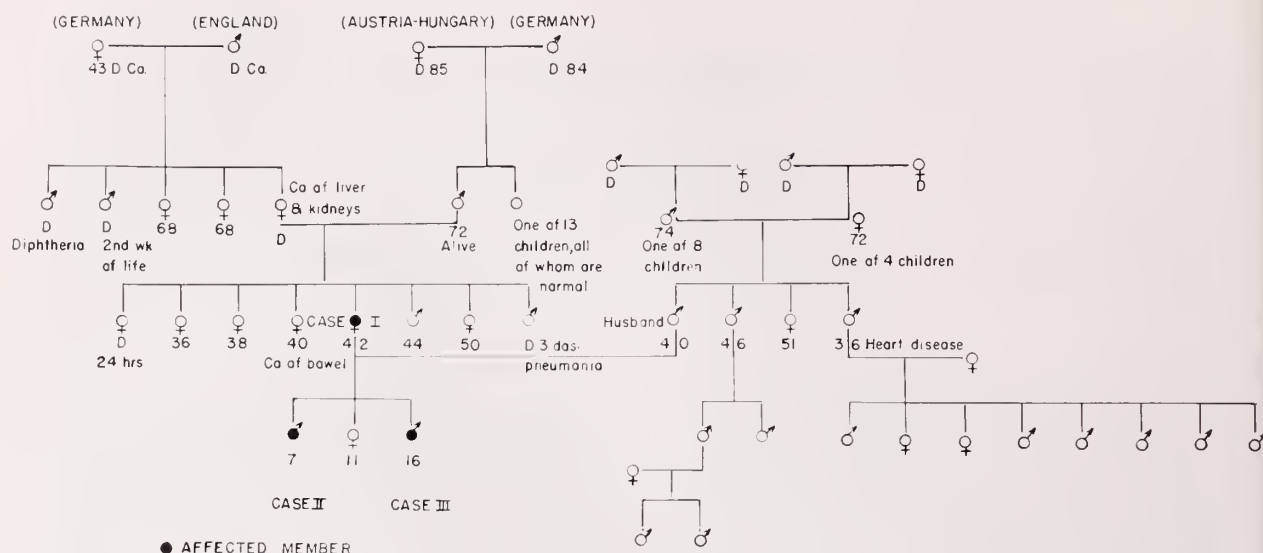


FIG. 1. Family tree.

The patient's ECG showed first degree A-V block with RSr' in V_1 and an S in V_6 suggestive of right ventricular hypertrophy. Chest X-ray films showed evidence of right ventricular enlargement with some increased vascularity in the lung fields. A right-heart catheterization and cineangiography, performed on November 18, 1966, demonstrated a left-to-right shunt at the atrial level by oxygen step-up, hydrogen inhalation indicator curves, and passage of the catheter through the defect. Mild pulmonary-artery and right ventricular hypertension (40/12 and 40/0-8 mm. Hg, respectively) were also noted. The coexistence of a left-to-right shunt at the ventricular level was eliminated by angiography performed by injection of contrast material into the cavity of the left ventricle. The angiogram demonstrated a normally placed left ventricular cavity with normal passage of the contrast material through the left ventricular outflow tract without left-to-right shunting or mitral regurgitation. These catheterization findings were subsequently confirmed when the patient's secundum atrial septal defect of 2.5 cm. was successfully repaired under direct vision with a cardiopulmonary bypass on March 16, 1967.

Case 2. The 16-year-old son of this patient described was the product of normal gestation and delivery. A murmur was first detected at the age of 5 months. However, the child had no cardiovascular symptoms until the summer of 1966. He had been able to participate in competitive high school football and track to and including the school year of 1966. During the summer of 1966 he began to notice that his exercise tolerance was decreasing and he was no longer able to mow the lawn without becoming short of breath. It was also noted that the frequency of upper respiratory tract infections had increased during the previous year.

Physical examination in November 1966 revealed a pleasant, well nourished boy weighing 124 pounds and being 69 inches tall. The blood pressure was 120/80 in both upper extremities. A marked pectus excavatum was present. The PMI was in the fifth left intercostal space at the midclavicular line. No thrills were palpable. The first heart sound was of normal intensity. The second sound was widely split and moved very slightly with inspiration but did not close with expiration. A third heart sound was heard, as was a prominent diastolic flow rumble. A grade



FIG. 2. Case 1. A and B. Hypoplastic thumbs. C. Right ventricular enlargement with increased vascularity.

III/VI systolic ejection murmur was heard best at the second left intercostal space. A systolic ejection murmur was likewise well heard at both the left and right lateral chest walls near the axilla, and this murmur spilled through the second heart sound. Peripheral pulses in the lower extremities, neck, and right upper extremities were normal. A brachial pulse was palpable in the left arm. No pulses were noted in the deformed distal extremity of the left arm. The right hand appeared to be normal at first inspection, but

deviation with a Q wave in leads II, III, and AVF. Roentgenograms showed right atrial and right ventricular enlargement with increased vascularity in the lung fields. A right-heart catheterization performed on November 18, 1966 demonstrated an atrial septal defect, peripheral pulmonic stenosis with a gradient across the stenosis of 10 mm., and a pulmonary to systemic flow ratio of 2:1. The boy underwent uneventful repair of a 2 cm. secundum atrial septal defect on June 27, 1967 at Walter Reed General Hospital.

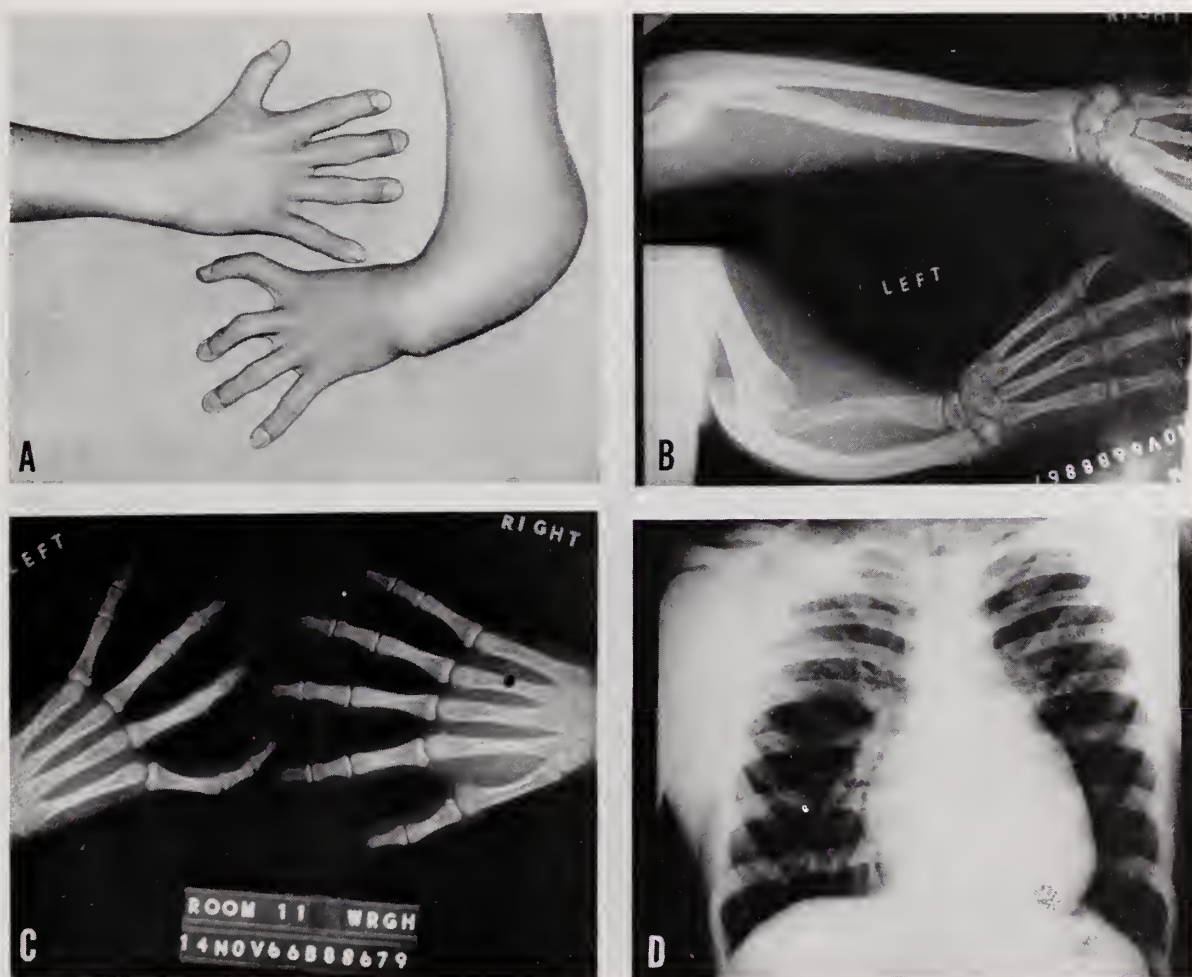


FIG. 3. Case 2. A, B and C. Radial deformity, with 5 fingers of right hand and 4 fingers of left hand with pollicization of index finger. D. Right atrial and ventricular enlargement with increased vascularity.

on closer observation the thumb was seen to be a fifth finger and was nonopposable. It arose more distally than normal from the metacarpal area. The left upper extremity was reduced in circumference in the humeral area compared to the opposite extremity. The distal left upper extremity was hypoplastic with shortening. A radial clubhand deformity was present. Only 4 fingers were present on the hand without evidence of a thumb. There was minimal pollicization of the index finger (figure 3).

An electrocardiogram showed right atrial enlargement, right ventricular hypertrophy, and right axis

Case 3. The 7-year-old son was the product of a normal gestation, delivery, and neonatal period. He was noted to have absent functional thumbs at birth. A cardiac murmur was first detected at the age of 2 years. Growth was moderately retarded, placing him in the lower tenth percentile for age. He was initially referred to Walter Reed General Hospital in August 1965 because of his impaired growth and the cardiac murmur.

At the time of the first clinic visit the physical findings consisted of a pectus excavatum, surgical absence of the right thumb, and a hypoplastic left

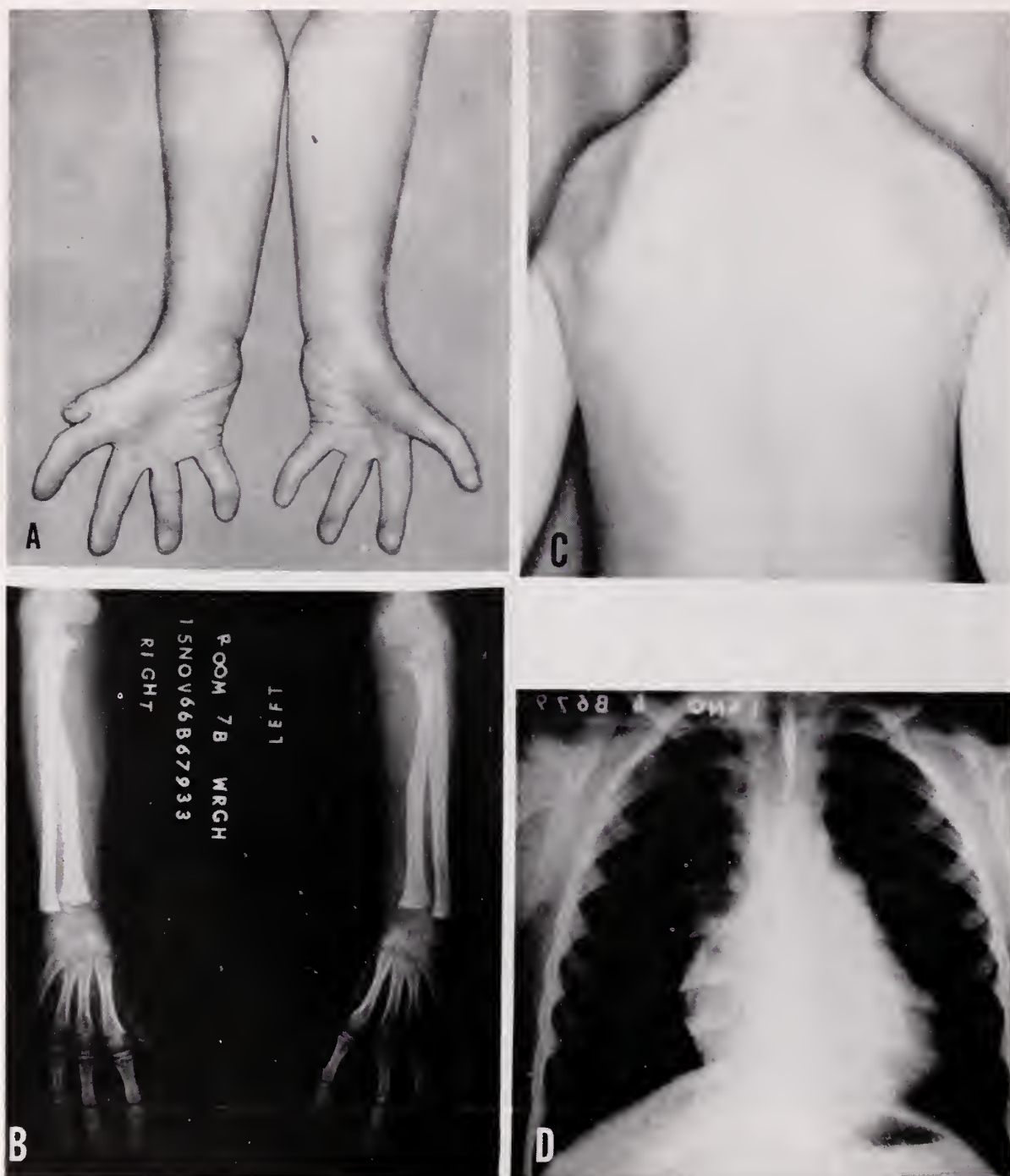


FIG. 4. Case 3. A and B. Digital dysplasia with right hypoplastic thumb, surgical absence of left hypoplastic thumb and pollicization of left index finger. C. Shoulder abnormalities. D. Cardiomegaly and normal vascularity.

thumb. A shoulder girdle deformity was most marked on the left (figure 4). Examination of the heart revealed the PMI to be 2 cm. to the left of the mid-clavicular line in the fifth left intercostal space. A palpable right ventricular lift was present along the left sternal border. The first heart sound was normal and single. The second heart sound was widely split and fixed without respiratory variation in both the

supine and sitting positions. A systolic ejection murmur of grade II/VI intensity was best heard in the second left intercostal space and was transmitted to the back. A systolic ejection click was not detected. A diastolic flow rumble was heard along the left sternal border.

The ECG showed right axis deviation, right ventricular hypertrophy, and an abnormal coronary sinus

pacemaker. Chest roentgenograms showed cardiomegaly and normal pulmonary vascularity (figure 4). On right-heart catheterization on November 18, 1965 a secundum-type atrial septal defect was identified by catheter passage, oxygen step-up, and hydrogen indicator curves. The pulmonary-to-systemic flow ratio was calculated as 3.7:1. On February 10, 1966 under general anesthesia and extracorporeal circulation the patient underwent right thoracotomy with successful repair of the atrial defect. A large secundum defect was identified and repaired with continuous suture. The postoperative period was complicated by recurrent supraventricular arrhythmias that ultimately were controlled by digitalization.

Follow-up at 9 months revealed the patient to be

Dermatoglyphic studies were performed on all by means of a Faurot inkless pad and paper technique. The dermal main lines and flexion creases were found to be markedly abnormal (figure 5).

Discussion

The association of radial skeletal defects with congenital heart disease has been reported, with Birch-Jensen's monograph¹⁰ containing the majority of the cases. As the reports of these associated defects increase, physicians are beginning to look for associated defects when a child is brought to them for specialty treatment.



FIG. 5. Normal handprint on right compared to print of case 3 on left revealing markedly abnormal dermal main lines and flexion creases and hypoplastic thumb.

enjoying excellent health and participating in all the activities of a healthy 7-year-old boy. The ECG continued to be abnormal, with A-V dissociation and occasional capture beats.

The surgical removal of the nonfunctional thumb on the right hand with pollicization of the index finger has been suggested to the family, with the expectation that the procedure will be performed 12 to 18 months after repair of the atrial septal defect.

Chromosomal Analysis and Dermatoglyphics

Chromosome studies were performed on peripheral leukocyte cultures from the mother and her affected sons. There were 50 metaphases counted in each case and a chromosome number of 46 obtained. There were 10 metaphases karyotyped photographically in each case with all karyotypes found to be normal.

The recurrence of the same malformation in different members of a family is not a rarity. As Murphy¹¹ showed in a study of 884 families having a malformed child and a malformed relative, both had the same defect in 41 per cent of the cases. When the heart alone was compared and more than 1 member of a family was so afflicted, the lesion was "nearly always the same" according to the late Paul Wood¹² in 1958.

In the family just described the mode of inheritance is not incompatible with that of autosomal dominant transmission, in that there is continuous expression from one generation to the next and the affected children have an affected parent. As demonstrated in previously reported cases and again in our family, males and females are affected, although there is not sufficient case material to determine the sex ratio.

It is not surprising that skeletal deformities of the hands are so often associated with cardiac defects because the upper extremity limb buds, which are present well in advance of those of the lower extremity, develop at the same time as the primitive heart tube begins to differentiate, at approximately the fourth week of fetal life.¹³ It is suggested that there is more to the syndrome than atrial and digital dysplasias. Skeletal anomalies are not limited to the digits, but frequently involve the radius, scapulohumeral joint, and the sternum. Similarly, intracardiac defects extend beyond simple secundum septal defects to include ventricular septal defects, pulmonary-artery-branch stenosis, and abnormalities of the conduction system.

These multiple skeletal and cardiac defects would appear to indicate that the term "atrio-digital dysplasia" might be too specific and that this constellation of skeletal and cardiovascular abnormalities should continue to be referred to as the Holt-Oram syndrome until more knowledge has accumulated regarding its genesis and pathology.

Summary

A family, consisting of a mother and 2 similarly affected sons, has been described to demonstrate the typical hereditary autosomal dominant cardio-

vascular and skeletal anomalies of the Holt-Oram syndrome (atriodigital dysplasia).

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Lomotil helps get children with diarrhea off toast and tea and back to normal diets and normal activity with gratifying dispatch. ■ Lomotil lowers intestinal motility and permits absorption of excess fluid. This usually controls diarrhea promptly. ■ Moreover, lowered intestinal motility achieved with Lomotil often relieves the abdominal cramps and discomfort so distressing to children.

Precautions: Lomotil is a Federally exempt narcotic preparation of very low addictive potential. Recommended dosages should not be exceeded, and medication should be kept out of reach of children. Should accidental overdosage occur signs may include severe respiratory depression, flushing, lethargy or coma, hypotonic reflexes, nystagmus, pinpoint pupils, tachycardia; continuous observation is recommended. Lomotil should be used with caution in patients with impaired liver function or those taking addicting drugs or barbiturates.

Side Effects: Side effects are relatively uncommon but among those reported are gastrointestinal irritation, sedation, dizziness, cutaneous manifestations, restlessness, insomnia, numbness of the extremities, headache, blurring of vision, swelling of the gums, euphoria, depression and general malaise.

Dosage: The recommended initial daily dosages, given in divided doses until diarrhea is controlled, are:

Children: Total Daily Dosage

3-6 mo. . . ½ tsp.* t.i.d. (3 mg.)



6-12 mo. . ½ tsp. q.i.d. (4 mg.)



1-2 yr. . . ½ tsp. 5 times daily (5 mg.)



2-5 yr. . . 1 tsp. t.i.d. (6 mg.)



5-8 yr. . . 1 tsp. q.i.d. (8 mg.)



8-12 yr. . . 1 tsp. 5 times daily (10 mg.)



Adults: . . 2 tsp. 5 times daily (20 mg.)



or 2 tablets q.i.d.



*Based on 4 cc. per teaspoonful.

Maintenance dosage may be as low as one-fourth the initial daily dosage.

SEARLE

Research in the
Service of Medicine



He's on the wagon...and

How well does Vistaril relieve the symptoms that plague an alcoholic during the recovery period? Doctors Knott and Beard of the Alcoholic Rehabilitation Unit, Tennessee Psychiatric Hospital Institute, recently conducted a double-blind study comparing Vistaril and another well-established antianxiety agent with placebo in 60 chronic alcoholic patients.¹

The investigators conclude: "It was the opinion of the staff that hydroxyzine was generally more effective than chlordiazepoxide, for the following reasons: hydroxyzine was equally if not more effective in reducing anxiety and tension and it produced less daytime sedation..."¹ (See results on succeeding pages.)

There is new evidence that Vistaril can ease tension, allay anxiety in chronic, hospitalized alcoholic patients. *But you might also choose Vistaril for what it doesn't do.* Although not evaluated in this study, Vistaril is reported to be non-euphoric, and its low toxicity makes it relatively safe. To date, to our knowledge, Vistaril is non-habituating. To date, for more than ten years of clinical use, there have been no reports of dependency in patients receiving Vistaril.

With Vistaril, it is as easy to stop therapy as it is to start.

Vistaril®
(HYDROXYZINE PAMOATE)

the study: Sixty chronic alcoholic patients were hospitalized and randomly assigned to one of three oral double-blind treatment regimens for three weeks. Twenty patients received hydroxyzine (Vistaril®), 100 mg. q.i.d.; twenty others were given chlordiazepoxide, 25 mg. q.i.d.; and the remaining twenty received placebo capsules q.i.d. The capsule code was not made known until after completion of the study and analysis of the data. Response was measured with a modification of the Brief Psychiatric Rating Scale as originally outlined by Overall and Gorham.* Subjects were rated daily by trained staff members.

SYMPTOM RATING KEY

- | | |
|---------------|---------------------|
| 1=Not Present | 4=Moderately Severe |
| 2=Mild | 5=Severe |
| 3=Moderate | 6=Extremely Severe |

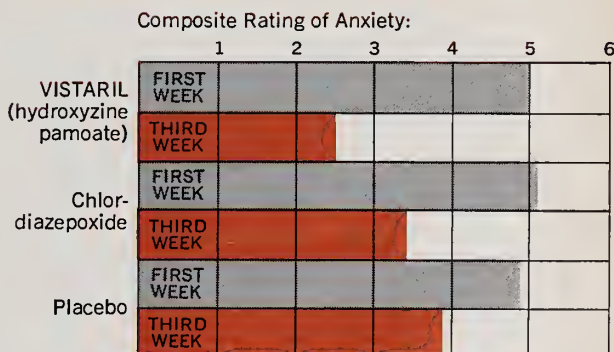
The figures which are given below represent the composite conclusions of the staff based on daily ratings during initial and final weeks of the study.

*Psychological Reports 10:799, 1962

the results'

■ DURING FIRST WEEK ■ DURING THIRD WEEK

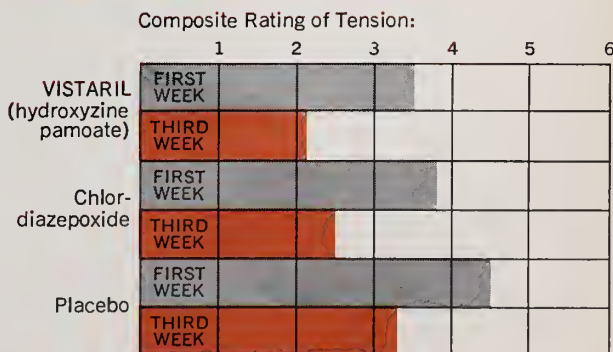
Anxiety reduced with Vistaril



OVERALL REDUCTION OF ANXIETY (%)

VISTARIL (hydroxyzine pamoate)	Chlordiazepoxide	Placebo
50%	33%	20%

Tension eased with Vistaril



OVERALL REDUCTION OF TENSION (%)

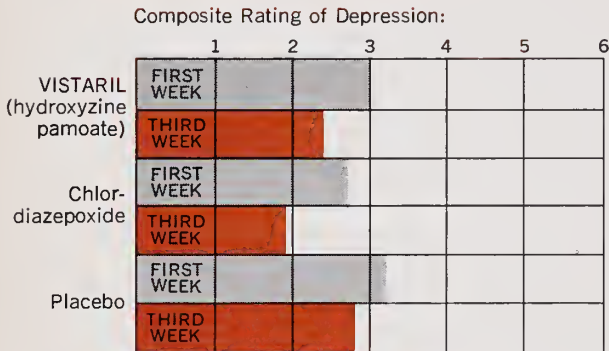
VISTARIL (hydroxyzine pamoate)	Chlordiazepoxide	Placebo
40%	34%	27%

In Alcoholism...

“Both hydroxyzine and chlordiazepoxide were generally more effective than the placebo. In some aspects, hydroxyzine was superior to chlordiazepoxide, which is currently the most frequently used psychotropic drug in the management of alcoholism.”¹

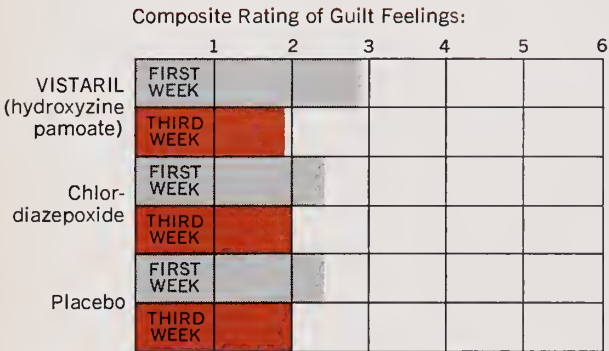
 DURING FIRST WEEK  DURING THIRD WEEK

Depressive mood improved with chlordiazepoxide



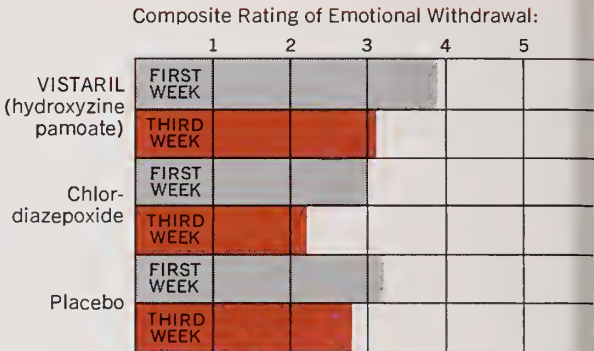
OVERALL IMPROVEMENT IN DEPRESSIVE MOOD (%)
VISTARIL (hydroxyzine pamoate) 20% Chlor-diazepoxide 30% Placebo 13%

Guilt feelings allayed with Vistaril



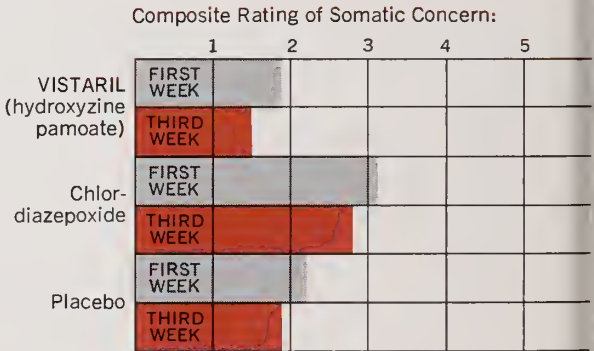
OVERALL DECREASE IN GUILT FEELINGS (%)
VISTARIL (hydroxyzine pamoate) 34% Chlor-diazepoxide 17% Placebo 17%

Emotional withdrawal counter-acted with chlordiazepoxide



OVERALL IMPROVEMENT IN EMOTIONAL WITHDRAWAL (%)
VISTARIL (hydroxyzine pamoate) 21% Chlor-diazepoxide 27% Placebo 13%

Somatic concern alleviated to minor degree in each group



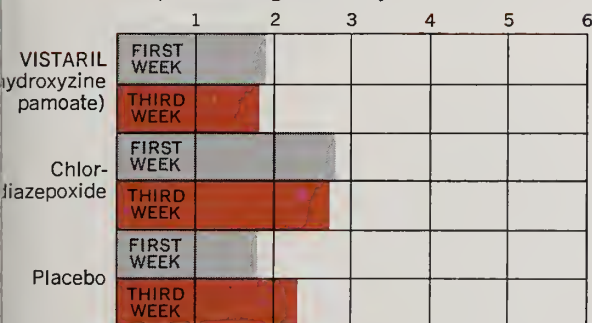
OVERALL ALLEVIATION OF SOMATIC CONCERN (%)
VISTARIL (hydroxyzine pamoate) 17% Chlor-diazepoxide 13% Placebo 14%

Less drowsiness with Vistaril

	Drowsiness	Dizziness	Mouth Dryness	Increased Motor Activity	Ataxia	Nausea	Comments
VISTARIL (hydroxyzine pamoate)	6 patients (mild)	3 patients (mild)	2 patients (moderate)	—	—	—	Side Effects Not Treated
Chlor-diazepoxide	10 patients (severe in 6)	4 patients (mild)	—	1 patient (moderately severe in first week but gradually subsided)	—	—	Side Effects Not Treated
Placebo	2 patients (mild)	2 patients (mild)	—	—	1 patient (mild)	2 patients (mild)	Side Effects Not Treated

Increase in hostility minimized with Vistaril and chlordiazepoxide

Composite Rating of Hostility:

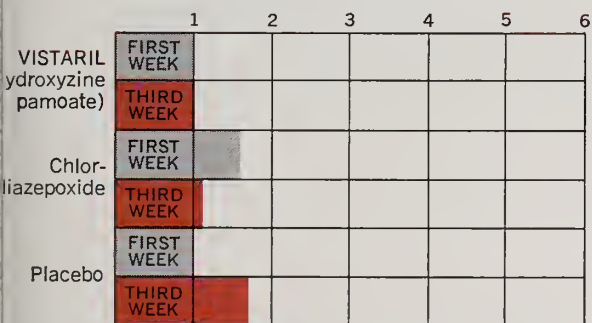


OVERALL CHANGE IN HOSTILITY (%)

VISTARIL (hydroxyzine pamoate) 5% Chlordiazepoxide 4% Placebo -28%

Cooperativeness not a significant problem

Composite Rating of Uncooperativeness:



OVERALL CHANGES IN COOPERATIVENESS (%)

VISTARIL (hydroxyzine pamoate) No change Chlordiazepoxide 31% Placebo -70%

n Alcoholism...

Vistaril®

HYDROXYZINE PAMOATE)

BRIEF SUMMARY

Contraindications: Hypersensitivity to hydroxyzine. The parenteral solution, for intramuscular or intravenous use, *must not* be injected subcutaneously or intra-arterially.

Hydroxyzine, when administered to the pregnant mouse, rat, and rabbit induced fetal abnormalities in the rat at doses substantially above the human therapeutic range. Clinical data in human beings are inadequate. Until adequate data are available to establish safety in early pregnancy, hydroxyzine is contraindicated during this period.

Precautions: Hydroxyzine may potentiate the action of central nervous system depressants such as narcotics and barbiturates. In conjunctive use, dosage for these drugs should be decreased, as much as 50%. Because drowsiness may occur, patients should be cautioned against driving a car or operating dangerous machinery. The usual precautions for intramuscular injection should be followed; soft-tissue reactions have rarely been reported when proper technique has been used. Hydroxyzine parenteral solution for intramuscular use should be injected well within the body of a relatively large muscle. In adults, the preferred sites are the upper outer quadrant of the buttock (i.e., gluteus maximus), or the mid-lateral thigh. In children, preferably the mid-lateral muscle of the thigh. In infants and small children the upper outer quadrant of the gluteal region should only be used when necessary, as in burn patients, in order to minimize the possibility of damage to the sciatic nerve. The deltoid area should be used only if well developed, such as in certain adults and older children, and only with caution to avoid radial nerve injury. Injections should not be made in the lower and middle thirds of the upper arm. Aspiration should be done to help avoid intravascular injection. On reported intravenous injection a few instances of digital gangrene have occurred distal to the injection site, considered to be due to inadvertent intra-arterial injection or possibly periarthral extravasation. Therefore, particular caution (aspiration and site injection) should be observed to insure injection only into intact veins; avoid either intra-arterial injection or extravasation. Intravenous administration should be accomplished slowly, no faster than 25 mg. per minute, and not to exceed 100 mg. in any single dose. In order to avoid possible adverse effects it is recommended that hydroxyzine parenteral solution be diluted to at least 50 cc. with sterile normal saline and administered over a period of four minutes or more, preferably into the tubing of a running intravenous infusion.

Adverse Reactions: Drowsiness may occur; if so, it is usually transitory and may disappear in a few days of continued therapy or upon dosage reduction. Dryness of the mouth may occur with higher doses. Involuntary motor activity, including rare instances of tremor and convulsions, has been reported, usually with higher than recommended dosage.

When this product is given intravenously undiluted, minimal amounts of intravascular hemolysis occur at the site of injection. Giving the maximum recommended intravenous dose (100 mg.) to adults results in immediate transient hemolysis with the liberation of a total of 2-3 grams of hemoglobin, which, in some individuals, can cause small amounts of hemoglobinuria. This compares with the normal red cell destruction from which approximately 8 Gm. of hemoglobin are liberated every 24 hours. If the hydroxyzine is diluted with 50 cc. of normal saline and given during a period of four minutes or more, this phenomenon does not occur.

Supply: Vistaril (hydroxyzine pamoate) Capsules: Equivalent to 25 mg., 50 mg., 100 mg. hydroxyzine HCl. Vistaril (hydroxyzine pamoate) Oral Suspension: Equivalent to 25 mg. hydroxyzine HCl per 5 cc. teaspoonful. Vistaril (hydroxyzine HCl) Parenteral Solution: 25 mg./cc.—10 cc. vial and 50 mg./cc.—2 cc. and 10 cc. vial; Isoject,® 25 and 50 mg. per cc., 1 cc. per unit.

More detailed professional information available on request.

Reference: 1. Knott, D.H. and Beard, J.D.: GP 36:118, September, 1967.

Pfizer

LABORATORIES DIVISION
New York, N.Y. 10017

Night Leg Cramps . . . Unwelcome Bedfellow In Diabetes,¹ Arthritis,² and Peripheral Vascular Disorders²

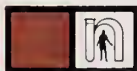


now . . . specific therapy for night leg cramps

Walker

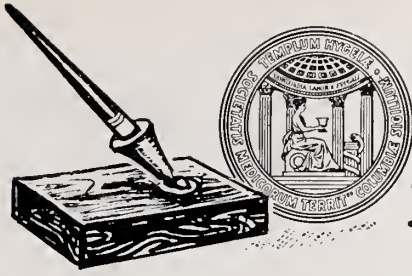
QUINAMMTM

Consistently effective, QUINAMM provided complete relief in 94% of 200 patients studied, many of whom were severe cases refractory to other medication.³ Your prescription for one tablet at bedtime often controls painful night cramps with the initial dose . . . helps restore restful sleep.



THE NATIONAL DRUG COMPANY
DIVISION OF RICHARDSON MERRELL INC
PHILADELPHIA, PENNSYLVANIA 19144

Prescribing Information: **Composition:** Each white, beveled, compressed tablet contains: Quinine Sulfate 260 mg. and Aminophylline 195 mg. **Contraindication:** QUINAMM is contraindicated in pregnancy because of its quinine content. **Precautions:** Aminophylline may produce intestinal cramps in some instances, and quinine may produce symptoms of cinchism, such as tinnitus, dizziness, and gastrointestinal disturbance. Discontinue use if ringing in the ears, deafness, skin rash, or visual disturbances occur. **Dosage:** One tablet upon retiring. Where necessary, dosage may be increased to one tablet following the evening meal and one tablet upon retiring. **Supplied:** Bottles of 100 and 500 tablets. **References:** 1. Shuman, C.: Am. J. Med. Sci., 225:54, 1953. 2. Perchuk, E., et al.: Angiology, 12:102, 1961. 3. Rawls, W., et al.: Med. Times, 87:818, 1959. 6/67 Q-706A



President's Page

CHALLENGES FOR THE YEAR 1968

IT SEEMS ONLY FITTING for the incoming president to take this, his first opportunity, to thank the members of the Society for their confidence in electing him to office. This I do most gratefully.

During the past year I have had an opportunity to learn a great deal about the complex work of our organization. My first and most lasting impression has been admiration for the few hundred faithful workers who have given willingly of their time, talent and energies to committee work, the Scientific Assembly, and special projects. Without them our Society would have been totally ineffective. We have an excellent staff, well informed and alert to the medical needs of the District of Columbia. Our Active membership is slowly increasing in number, and although it does not include all of the practicing physicians in the District of Columbia, interest of individuals in the work of the Society is improving steadily.

Never before has the private practice of medicine faced greater challenges than it does today. Changes are taking place rapidly in our methods of practice, and never have the demands of the American public on the medical profession been greater. To meet these demands no physician can practice entirely independently, but we are all, to a greater or lesser extent, dependent upon one another.

Our Medical Society is the most natural and logical forum for the discussion of ideas and for the formulation of policy. But it will be successful only if each member takes an active part in its work. This work cannot be carried out by any one individual but is best performed through many committees. The response to our request for committee workers has been greater than ever before, and I hope that the assignments which have been made will be in accordance with your wishes.

To increase the usefulness of the Medical Society we must keep 2 goals in mind, continuing increase in the size of the Active membership and, especially, participation of more individuals in its activities.

William S. McLure



WILLIAM STANLEY McCUNE, M.D.

President, The Medical Society of the District of Columbia, 1968



William Stanley McCune, M.D.

THE MEDICAL SOCIETY of the District of Columbia begins the 151st year of its existence under the presidency of Dr. William Stanley McCune, who combines with apparent ease a teaching and private surgical profession. As the 101st President of the Society, he assumed office on January 1, 1968.

A native of Michigan, Dr. McCune was born, June 4, 1909, to William G. and Helen A. McCune, in Potoskey, where he attended the public schools. He graduated from Swarthmore College in 1931, and received his medical degree from Harvard Medical School in 1935. He interned in surgery at Massachusetts General Hospital from 1935 to 1937 and received further training in surgery at Peter Bent Brigham Hospital and at Boston Lying-in Hospital during the years 1937 to 1939. He was certified by the American Board of Surgery in 1946.

Dr. McCune began his practice in the District of Columbia in 1946. On the faculty of George Washington University School of Medicine since 1950, he is now Clinical Professor of Surgery and attending surgeon at the University Hospital. He is consultant in surgery to Walter Reed General Hospital and to the U. S. Veterans Hospitals in both Washington and Martinsburg, West Virginia. He is also consultant in surgery to the National Institutes of Health. His offices are at 2520 L Street, N.W.

During World War II Dr. McCune served for 3 years in the U. S. Army Medical Corps, with the rank of Major, and was assigned to the Surgical Department of Walter Reed General Hospital.

Along with his professional duties, Dr. McCune devotes much time to the affairs of Medico, as a member of the Medical Advisory Board of Care-Medico, a Director of Medico, and President of

the Society of Alumni and Friends of Medico. Under the aegis of Medico he spent a memorable "vacation" in 1962 in Malaya, where he performed surgery for an entire month in the town of Kuala Lipis.

In addition to his membership in the D. C. Medical Society, which he served as President-elect the past year, Dr. McCune is a Fellow of the American College of Surgeons and a member of the American Medical Association, the American Surgical Association, the Southern Surgical Association, the Southeastern Surgical Congress, the Society for Surgery of Alimentary Tract, the Washington Academy of Surgery, and the Société Internationale Chirurgie.

To the literature, in the field of surgery, he has contributed more than 70 papers bearing his name as author or co-author. He is a Phi Beta Kappa and a member of Alpha Omega Alpha Fraternity and the Harvard Club of Washington.

Dr. McCune is married to the former Doris Douglas of Minneapolis. The McCunes, who reside at 5410 Moorland Lane, Bethesda, have 4 daughters: Cynthia (now Mrs. Phillip Allen, of Great Falls, Va.), who is teaching in Virginia schools; Carol, a teacher in Needham, Mass.; Barbara, a postgraduate student at Boston University; and Mary, a senior at the Interlochen Arts Academy at Interlochen, Michigan. Dr. McCune finds time occasionally for golf, and in the summer he and his family often vacation at their cottage in North Michigan where sailing is one of their favorite recreations.

It is the belief of the Society's membership that Dr. McCune will translate his abilities in surgery to the affairs of the D. C. Medical Society, thus adding his own unique contribution to those of the Society's long roll of distinguished presidents.

Will It Comfort the Patient?

THE COMPUTER frightens many of us because we really do not understand it. It deeply concerns many of us, too, because it appears to emphasize the impersonal when the hue and cry today is that the delivery of medical care has already become too impersonal and that the science of medicine has engulfed the teaching and practice of medicine.

That the computer is here to stay seems obvious. The computer will only do what we tell it to do, and its answers are simply no better than the program we design for it. It is a fantastically useful tool, retrieving an amazing amount of information in an unbelievably short period of time. If the computers make mistakes it is because we humans put errors into our programs.

Electronic data processing and computerization can provide quickly and accurately information about an individual patient, a small group, or the community at large. The ultimate is to design programs that will free the physician from a maze

of scattered information to the point where his productive time is increased, thus increasing the time available to spend with the patient with useful information already at hand or quickly available. It provides a means of controlling paper work that can no longer be effectively controlled by old-fashioned hand procedures.

Many medical uses of computers are prestleny working for physicians and hospitals. Admissions, billings, dietary and pharmacy planning are computerized in a number of hospitals. This is not the place to attempt to list present or projected uses of computers. It does seem to be the place, however, to suggest that we, as physicians, interest ourselves in the potential of the computer that will lessen the drudgery loads of patient care to the end that our productive time is increased and that the care of the patient will be improved, and that it will really comfort the patient.

R. LOMAX WELLS, M.D.

AMA Archive-Library*

THE AMA ARCHIVE-LIBRARY upholds the traditional role of the medical library as an adjunct to the postgraduate education of the physician in practice, but it is even more than a library. It is a complete information center.

As a national medical society library, the Archive-Library is able to provide services not normally available on the local level. A more complete collection of materials allows the Library to supplement local library service. In addition, several special subject collections cover thoroughly such topics as international health, history and the sociology and economics of medicine. The AMA's collection on the sociology and economics of medicine is the best in the world. It contains almost all the English language publications and includes opinions reflected in mass media as well as in scholarly works.

At the core of the Library is a collection of current medical publications. Today, 2,200 journals are received on a regular basis. This is twice the number contained in any average medical school library. These represent all the major publications in medicine and the allied sciences. In addition to the periodicals, the Library contains 40,000 books.

This makes the Archive-Library one of the most complete current medical libraries found anywhere.

Perhaps the one thing above all others which sets the AMA medical Library apart and makes it a true information center is the availability to the Library staff of a unique resource unavailable at many other medical libraries—the professional staff members of the AMA's 20 scientific departments. "The professional staff is here and we can use them," Susan Crawford, Director of the Archive-Library, says. "Few other libraries have this type of consultation available. When a doctor writes to us and wants medical opinion or judgment, his question is referred to a consultant on the AMA staff, or to one of many specialists in the country, through the Questions and Answers Department of J.A.M.A."

The Library can give all the information needed on foreign medical organizations, hospital and medical facilities in various countries, living conditions, what should be brought in, and the locations of the nearest American physician in any country.

The staff can also furnish information on a comprehensive and up-to-date listing of medical

(Continued on page 82)

* From a news release prepared for State and County Medical Society Journals and Bulletins by the American Medical Association.

Proceedings of the Annual Business Meeting

DR. HENRY D. ECKER, President of the Medical Society of the District of Columbia, called the meeting to order at 4:15 p.m. on Sunday, November 19, 1967. He introduced those on the platform with him: Dr. Karl C. Corley, Chairman of the Executive Board; Dr. William S. McCune, President-elect; Dr. W. LeRoy Dunn, parliamentarian; and Mr. George W. Cooley, Secretary-Treasurer.

In Memoriam to Deceased Members

As the first order of business, Dr. Ecker asked those present to rise as he read the names of the physicians who had passed away since the last Annual Business Meeting:

Barger, G. J. P. (Life)—November 25, 1966
Barrett, Robert J. (Associate)—October 2, 1967
Bosworth, Robert J. (Active)—June 9, 1967
Bowne, Charles J. (Life)—April 27, 1967
Bradley, Thomas (Active)—January 2, 1967
Burka, Philip (Active)—April 14, 1967
Claud, Harry Lee (Life)—December 6, 1966
Coleman, Francis T. (Active)—October 15, 1967
Constantinople, P. S. (Active)—February 18, 1967
Dyar, Edna G. (Life)—February 2, 1967
Finnigan, Charles A. (Associate)—February 6, 1967
Fischer, Melville B. (Life)—February 3, 1967
Foley, Thomas M. (Life)—July 18, 1966
Glattly, Harold W. (Associate)—October 26, 1967
Hopkins, Gerald A. (Associate)—September 12, 1967
Klyza, Stanley J. (Active)—February 14, 1967
Lindsay, Janvier W. (Life)—March 2, 1967
London, Louis S. (Life)—July, 1967
McChesney, Frank M. (Life)—February 23, 1967
McInerney, Michael J. (Active)—June 1, 1967
Roth, George B. (Associate)—May 23, 1967
Talbot, John A. (Life)—April 27, 1967
Thomen, Luis F. (Honorary)—July 25, 1967

Remarks of the President

Dr. Ecker commented briefly on his year as President and related some of the accomplishments for the year (see the President's Page in the December, 1967 issue of the ANNALS, page 757).

Report of the Board of Credentials

The Chairman referred to the Report of the Board of Credentials, which appears on page 65 of this issue. He stated that if there were no questions concerning this report it would be considered for information only.

Report of the Executive Board

The Chairman called upon Dr. Corley to present the report of the Executive Board (see page 55). Dr. Corley reviewed each of the items contained in the report, commenting at length on

some items and noting that others were for information only. He urged the members to read this report so as to understand more fully the activities of the Executive Board during the year.

Dr. Corley read the recommended changes in the Constitution and By-laws and moved adoption of the following change in Chapter II, Article V: "They shall not vote or hold office in the Society, but shall have the privilege of serving on Committees and *may be members of Sections of the Society, where they may vote and hold office as provided in Chapter X.*" The italicized portion contains the additional wording. By vote, this change was approved.

At this point, President Ecker took over the podium, on behalf of the Executive Board, to nominate Dr. Corley for a term of 5 years to the Board of Trustees of Group Hospitalization, Inc. to succeed Dr. Ralph D. Whitney, whose term expires in April 1968. Since there were no additional nominations from the floor a motion was made that the nominations be closed and the Secretary was authorized to cast a unanimous ballot for the nominee.

Dr. Corley returned to the podium to present the other nominations made by the Executive Board.

Dr. Russell M. Tilley was nominated to the Board of Trustees of Medical Service of D. C. for a term of 3 years to succeed Dr. Frank S. Pellegrini, and Dr. Howard A. Donald to the same Board for a term of 3 years to succeed Dr. Leonard T. Peterson. Since there were no additional nominations from the floor, it was moved that the nominations be closed, and the Secretary was instructed to cast a unanimous ballot for Drs. Tilley and Donald.

The following were nominated for membership on the Board of Directors of Health Foundation of D. C. for 1 year, or until their successors are named:

Henry D. Ecker, M.D. (Society President)
William S. McCune, M.D. (Society President-elect)
George W. Cooley (Society Secretary-Treasurer)
Wilfred Dudley, D.D.S.
John R. McHugh, Pharmacist
Grace Matthews, R.N.
Roland B. Scott, M.D.
Marvin C. Korengold, M.D.
Edward W. Nicklas, M.D.
Mr. Renah Camalier
Mrs. Jane Yates

Since there were no additional nominations from the floor, the Chairman asked for approval

Synirin provides prompt barbiturate potentiation of aspirin without limiting the therapeutic usage of aspirin. Both pentobarbital and aspirin begin their action together promptly and last 4 or 5 hours. There is no accumulation.

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Synirin®

ACETYL SALICYLIC ACID (ASPIRIN)..... 5 GR.
*PENTOBARBITAL (ACID)..... 1/8 GR.

**Warning: may be habit-forming*

of the slate as a whole. It was moved and the Secretary instructed to cast a unanimous ballot for all nominees.

Dr. Corley reviewed the proposed budget for 1968 (see page 62), pointing out that despite a potential loss of \$10,700.00 for 1967 the Executive Board had agreed that a recommendation for a dues increase should not be made at this time. In response to a question from the floor the Secretary-Treasurer stated that the funds of the MEDICAL BUREAU are not used to support any part of the General Fund activities but are kept separate, and any remaining funds at the end of the year are transferred to a savings account to be used for future contingencies for the MEDICAL BUREAU. By vote the budget for 1968 was approved.

Dr. Corley called attention to several changes which had been made in the Relative Value Scale. He also stated that a number of additional changes were expected to be made by the end of 1967 and would be included in a reprint of the Relative Value Scale early in 1968.

Calling attention to the fact that the applications of all new members are acted upon by the Executive Board, upon the recommendation of the Board of Credentials, and that this approval constitutes election for a 1-year provisional membership, Dr. Corley stated that it was incumbent upon the membership to approve these provisional members and to vote them in to full membership at this time. On a motion made, seconded and carried it was voted to approve full membership status for 41 Active, 31 Associate, and 4 Resident-Intern members. It was noted from the floor that Dr. Harold W. Glattly, an Associate member, was now deceased.

Report of the Secretary-Treasurer

The Chairman referred to the report of the Secretary-Treasurer (page 60). He urged every member to read this report since it contains pertinent information on membership, activities in the new headquarters, the MEDICAL BUREAU, the MEDICAL ANNALS, and on the Society's finances. There was nothing in the report which required action by the membership.

Report of the Woman's Auxiliary

The Chairman called on Mrs. James H. Scully, President of the Woman's Auxiliary, to make a report to the membership. This was the first time the Auxiliary had been asked to make a report at the Annual Business Meeting, he said, and he hoped that this policy would be continued.

Report of the Nominating Committee

The Chairman referred to the fact that almost 1,000 ballots had been received in the vote of the membership for the Nominating Committee members; 7 were selected by vote from a slate of 21. He thanked the tellers who had handled the difficult task of counting the ballots; they were Drs. Thomas M. Arnett, John L. Chamberlain, Allen S. Cross, Samuel Diener, Parker S. Dorman, Gilbert M. Eisner, and Harold H. Hawfield.

Dr. Ernest A. Gould, Chairman of the Nominating Committee, was called on to submit the names of the nominees for office. He presented the following names:

President-elect: Frank S. Bacon

First Vice President: Jed W. Pearson

Second Vice President: Gundrum M. Augustin-Rueckert

Member of Executive Board for a 4-year term: Henry D. Ecker

Member of the Board of Credentials for a 3-year term: Seymour Alpert and C. Edwin McNamara

Member of the Board of Credentials for a 2-year term to complete the term of Dr. Michael J. McInerney (deceased): Eugene A. Clark

Delegate to AMA for a 2 year-term: John J. Hughes

Alternate Delegate to AMA for a 2-year term: Theodore J. Abernethy

These nominees were submitted on behalf of all members of the Nominating Committee, which included, in addition to the Chairman, Drs. Edward E. Ferguson, Charles P. Ryland, J. Spencer Dryden, Stafford W. Hawken, Paul Jaquet, and John F. Finnegan.

The Chairman thanked Dr. Gould and called for nominations from the floor as each individual nominee was presented. There being none the Secretary was authorized to cast a unanimous ballot for each nominee and for the slate as a whole. (The Chairman presented all nominations, except the nomination for the member of the Executive Board; Dr. Corley took the podium to present the name of Dr. Ecker.)

The Chairman introduced the new officers who were present, asking each to rise and be recognized.

The presentation of the Certificate of Appreciation to last year's President was made in absentia because Dr. Robert J. Coffey was not present.

At this time Dr. Corley took the podium and presented an inscribed gavel to Dr. Ecker, the outgoing President, in appreciation for his services during the year.

The Chairman returning to the podium introduced the incoming President, Dr. McCune, who

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spoke briefly on the activities undertaken by Dr. Ecker which he hoped to further. He called upon the new officers and committees for 1968 to assist him as they had his predecessor.

Other Business

Dr. William P. Herbst asked to take the podium. He commented, at some length, on the funds available for research at NIH and his concern over the fact that a recent General Accounting Office report might well have an adverse effect on the availability of future funds for research. Insufficient funds were available at the present time for proper research, he said, and any reduction in the funds made available to NIH might well preclude new developments in research and in other areas.

He suggested that the Medical Society take the initiative and seek the coöperation of the Deans of the Medical Schools, the President and Vice President of the United States, Dr. Bennett, who is Advisor to the President, and Members of Congress in considering the present levels of research and the needs for research in the future.

Dr. Herbst moved, and it was seconded from the floor, that the Executive Board of the Medical Society take it upon itself to confer with the

Deans of the 3 Medical Schools in an effort to develop an agenda for such a conference, and he asked that he be included in such a conference.

In the discussion from the floor which followed, it was pointed out that the Association of American Medical Colleges had already taken steps to counteract the report to which Dr. Herbst referred and that Dr. John Parks was presently President of this Association. It was thought that if anything further was done, this Association should be contacted to see what plans it had in mind.

It was also noted from the floor that this motion undoubtedly had the sympathy of all those present but that because of its many implications it should be referred to the Executive Board for consideration.

Motion was made by Dr. John Kenney, and seconded, that this matter be referred to the Executive Board for consideration. In proceeding with the voting, the amendment was voted on first and approved; the original motion was also approved.

Dr. Paul B. Cornely asked for an opportunity to speak from the podium. In his opinion, the Medical Society was not reflecting some of the important community problems and he listed 4 areas for consideration:

1. The infant mortality problem, which at the present time is of the highest in the Nation and needs immediate attention.
2. The relationship between health and poverty.
3. A single system of medical care for all persons in the District of Columbia to replace the present dual system.
4. The need for Negro representation on the Executive Board in a city where some 55 per cent of the people are Negro.

There being no further business, the meeting was adjourned at 5:30 p.m.

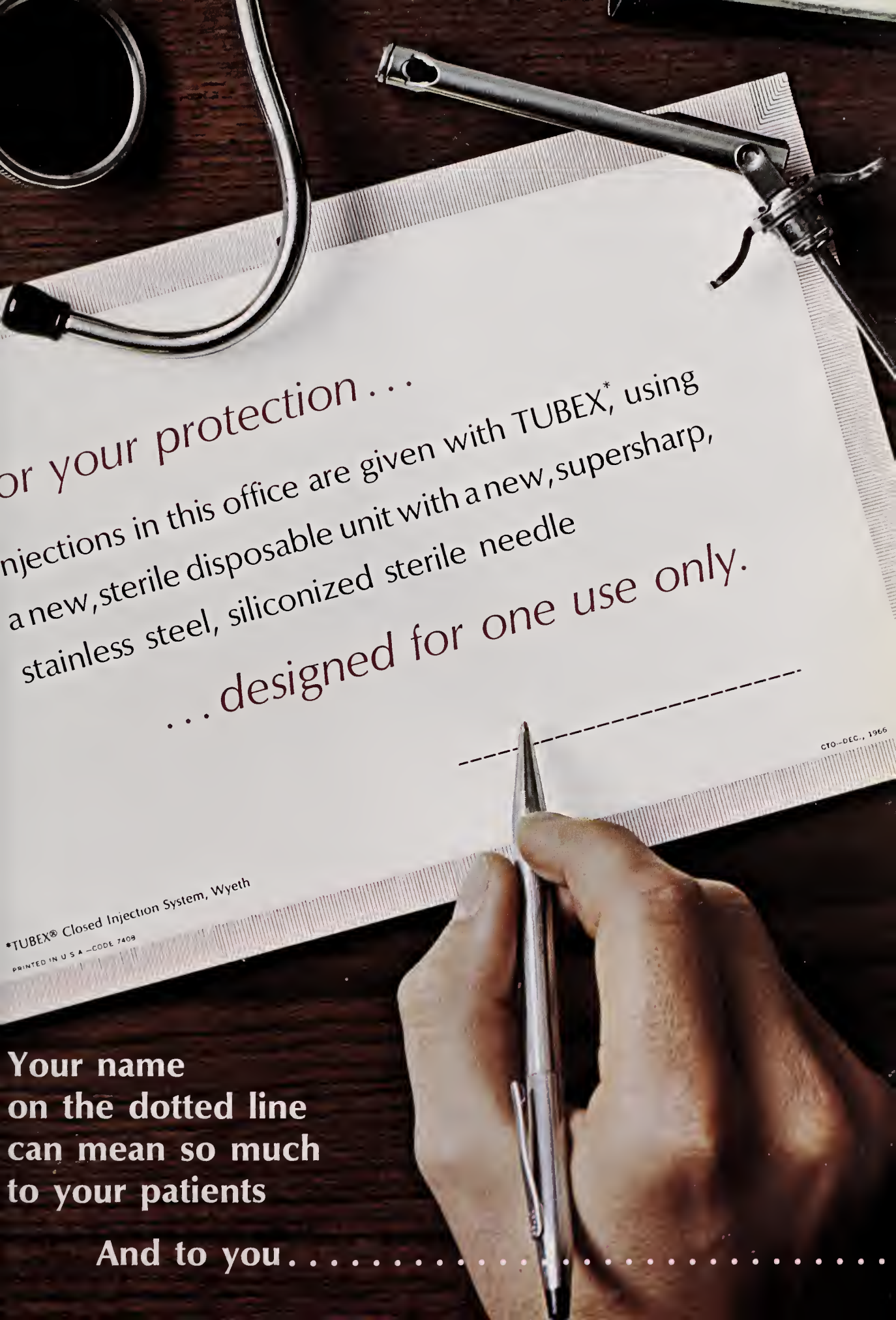
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Reports Presented at Annual Business Meeting

November 19, 1967

Report of the Chairman of the Executive Board

THE YEAR 1967 may well be remembered as a year producing little Federal legislation affecting medicine. After the barrage of the "Great Society's" Congressional enactments to provide care to one and all, this lull to see what will really occur as a result is most welcome.

Council and Committee Structure

The flexibility in committee structure has permitted the President to create several new ad hoc committees for specific purposes; among these are: Committee on Aviation Medicine, Dr. Robert S. Poole, Chairman; Committee on Multiphasic Screening, Dr. Thomas M. Peery, Chairman; Committee on Medical Licensure, Dr. William S. Cole, Chairman; Committee on Air Pollution, Dr. Murdock Head, Chairman; Committee on Liaison with the Woman's Auxiliary, Dr. Edward W. Nicklas, Chairman; and Interdisciplinary Committee on Drug Dependency, Dr. Seymour Alpert, Chairman.

The House and Building Fund Committee

It took over 18 months after moving into the new headquarters to make the final payments to the contractor. Many uncompleted and unsatisfactory items were finally finished. Total cost for the building was \$814,000.00 or some \$5,000.00 over the original estimate, including finishing floors three and four. The architect's fee, including engineering, etc., was \$39,000.00. The land costs came to approximately \$50.00 per square foot. This latter acquisition was made possible through the coöperation of the Columbia Operating Company, an organization of member physicians with Dr. Alan J. Chenery as the President; a member of the Society, Dr. Everett J. Gordon; and Margaret G. Trim. Each owned one of the 3 pieces of property put together for our headquarters and gave the Society a very reasonable price.

The furnishings and decoration of the Exhibit Hall, Lounge and Conference Room C have yet to be completed. These will be finished as the Committee, now chaired by Dr. Leon Gerber, determines the most suitable type of decorations and furnishings to fit in with their use. It is hoped that portions of the Exhibit Hall may be paneled to relieve the monotony of a single color. Dr. Milton L. Goldman has already selected some

unique decorations for the Lounge, in coöperation with several donors. Conference Room C will probably remain a place where refreshments may be served without worrying about the carpet. If you haven't visited the headquarters you should do so, and, of course, donations are always acceptable.

Committee on Regional Medical Program

This Program under P. L. 89-239, in reference to Heart, Cancer and Stroke, was undertaken January 1, 1967 with the Medical Society as grantee. Dr. Desmond S. O'Doherty, Chairman of the Committee, succeeded in obtaining the services of Dr. Thomas W. Mattingly as Program Coördinator. No regional project is simple, and Dr. Mattingly has done an outstanding job of pulling together the many diverse interests into a coördinated planning unit. He has succeeded in recruiting a part-time staff of specialists in heart, cancer and stroke from both private practice and the medical school faculties.

The Advisory Group, composed of representatives of over 40 groups and organizations in the Metropolitan Area, including the medical schools and medical societies, met monthly through September. Its organizational structure has been completed so that the primary burden of reviewing planning activities and operational grants falls upon the subcommittees.

In view of the potential effect on medical practice of this Program (P.L. 89-239) and the Comprehensive Health Planning Act (P.L. 89-749), it would seem that every member should become acquainted with both laws and take an active interest in making a success of P.L.89-239. The consequences of P.L. 89-749 may well be most adverse, since all authority in the latter rests in the Health Department, as opposed to community voluntary groups which control the former.

Dependents' Medical Care

The Program for Medical Care for Dependents of Servicemen (O.D.M.C.) received this Society's coöperation since its inception in 1949. With the changing patterns in prepayment and increasing costs and the original O.D.M.C. fee schedule still in use, it was agreed that renegotiation was necessary. An ad hoc committee was formed,

including representation from area medical societies, to confer with O.D.M.C. officials.

Only 2 of the 6 medical societies agreed to a renegotiated contract, but before this could take effect the O.D.M.C. officials were instructed to use the "usual and customary" fee concept, thereby negating the need for a contract or fee schedule. The O.D.M.C. has a new title, Office of the Civilian Health and Medical Program of the Uniformed Services (O.C.H.A.M.P.U.S.). Under this Program, dependents of servicemen and military retirees have a free choice of physician for most outpatient services. It seems to be working, since few complaints have come to the Society's attention. It is administered in this area by Medical Service of D. C.

Membership Directory

Early in the year the Executive Board approved the idea of a directory of Society members, with photographs, authorizing the Secretary to determine the cost and report back to the Board. It soon became evident that such a directory would cost in excess of \$6,000.00. As a result the idea was discarded and a directory without photographs may be prepared in early 1968.

Ruffin Bequest Fund

During the year 2 members of the Society have been assisted financially from resources in the Ruffin Bequest Fund. This Fund, a gift provided in the will of Dr. Sterling Ruffin, was established for the purpose of assisting members in financial need. A special committee, of which Dr. J. Spencer Dryden is Chairman, reviews requests for financial assistance and makes recommendations to the Executive Board.

Fee Review Committee

During the first 10 months of 1967 this Committee, under the chairmanship of Dr. Herbert M. Giffin, reviewed 103 cases referred to it by Medical Service of D.C. and private insurance carriers. This compares favorably with cases reviewed the past several years: 100 in 1966, 175 in 1965, 176 in 1964, and 103 in 1963. The number should increase with "usual and customary" fees now being used in Medicare and O.C.H.A.M.P.U.S.

Many complaints were received from members concerning the wording of letters sent them by Medical Service of D.C. and to their patients when fees charged were referred to the Fee Re-

view Committee. M.S.D.C. was asked to revise the letters to clearly indicate that the Fee Review Committee reviews cases and gives its recommendations as to the possible liability of M.S.D.C. under the Comprehensive Contract, and that the decision of the Committee relates to customary fees in this area and does not establish the fee of the physician, since this is a matter between him and his patient. The Fee Review Committee does not set fees; it determines possible liability of M.S.D.C. under its contracts where "usual and customary" fees are used.

AMA Disability Program

The recommendation of the AMA Board of Trustees to reduce its Disability Program and alter age provisions brought immediate response from our members. Many telephone calls, letters, and wires to our Delegates led the Executive Board to make formal protest to the AMA. Dr. Raymond T. Holden, our Senior Delegate, also led the fight to retain the present program benefits at the Atlantic City Session. As a result the benefits and premiums were maintained, with a new carrier, for another 5-year period.

Contact Lens Dispensing

The Board approved the following statement in reference to the fitting and dispensing of contact lenses:

1. Opticians or contact lens fitters must make it clear to their customers that they cannot be fitted with a contact lens unless the customer is a patient of an ophthalmologist and has a recent prescription for contact lens.

2. It was agreed that the ophthalmologist should insert below his prescription the following: "Patient to contact me upon delivery of contact lens." Of course, other pertinent information regarding the refraction, as seen fit in the medical opinion of the prescribing doctor, should be included.

3. It was further agreed that the optician should notify the physician in writing when he has delivered the contact lenses to the patient.

Professional Liability

The Committee on Medicolegal Problems, Dr. Harvey Ammerman, Chairman, reviewed income and losses incurred by the St. Paul Insurance Company under the Society's professional liability program. The Board is pleased to report a more favorable loss ratio than in some 5 years. It was

agreed to maintain present premiums, and if this situation continues it is hoped that a reduction may be made in premiums in 1968.

Resolutions to AMA

At the June Session of the AMA House of Delegates our Delegates were instructed to introduce 2 resolutions; both were acted upon favorably.

Study of Federal Health Programs:

WHEREAS: The Federal Government has for many years been increasing its concern with health and health-related problems; and

WHEREAS: This had led to an increasing multiplicity of individual programs administered without central direction or coordination or any effort at preventing duplication; and

WHEREAS: The AMA has found it necessary to approach and generally oppose each of those new programs individually, thereby leading to a great variety of types of testimony, most of which has been interpreted by the public as negative or "anti"; and

WHEREAS: This has been one of the primary reasons why the public image of the AMA is negative; *therefore be it*

Resolved: That this House of Delegates take immediate initiative in undertaking a definitive study of present and proposed Federal health programs to determine their need and the extent of overlapping and duplication between them; *and be it further*

Resolved: That the purpose of this study be to arrive at a sound, sensible, and positive program for bringing Federal health programs together into a single coordinated program (aside from the military); *and be it further*

Resolved: That it be made clear to the public that the Association's objective is to reduce or eliminate the present high costs of the Federal Government's exploration into the field of health care to the end that the public may benefit from better and more medical services with less financial waste.

Decentralizing of A.M.A. Conferences:

WHEREAS: The AMA has as one goal the improvement of existing health care services in the United States and the establishment of new health services where they do not exist; and

WHEREAS: The AMA supports the doctrine free choice of physician by the patient and free choice of patient by the physician; and

WHEREAS: The AMA supports the doctrine of usual, customary and reasonable fees and the selection by the physician as to his method of billing for services rendered to patients, either to the patient directly or to a third party involved in payment; and

WHEREAS: The state and component societies must be responsible for implementing any Medical Service programs which may be developed for the purpose of furthering the above goal and in accord with the above doctrines; *therefore be it*

Resolved: That the AMA Board of Trustees reevaluate

its policy of sponsoring or co-sponsoring national conferences and consider instead the use of regional conferences to better aid, assist, and guide state and component societies in such implementation.

Multiphasic Screening

An Ad Hoc Committee on Multiphasic Screening, with Dr. Peery as Chairman, reviewed the 3 years' experience of the Department of Public Health. The Board approved the recommendation of this Committee endorsing a continuation of this Program, including the proposed unit at D. C. General Hospital, with the proviso that reports sent to physicians should be clarified so as to be understood, and that any future announcements of the Program specify that no individual should consider these screening tests as a substitute for a visit to his or her physician, since screening is never a substitute for a physical examination.

Committee on Constitution and By-laws

This Committee, chaired by Dr. W. Leroy Dunn, has recommended a further clarification in the By-laws, which has been concurred by the Board, as follows: In Chapter II, Article V, regarding Associate members, the third sentence beginning in line 9 now reads: "They shall not vote or hold office in the Society, but shall have the privilege of serving on Committees and Sections of the Society."

It is recommended that this sentence be changed to read: "They shall not vote or hold office in the Society, but shall have the privilege of serving on Committees and *may be members of Sections of the Society, where they may vote and hold office as provided in Chapter X.*"

The italicized portion contains the recommended additional wording.

Medical-Dental Research Foundation

This nonprofit organization, established in cooperation with the Dental Society, has its own Board of Trustees, with members nominated by both Societies. The 3-year term of Dr. Myer Stolar expired in July of this year, and the Executive Board nominated Dr. Stolar to succeed himself for a second 3-year term.

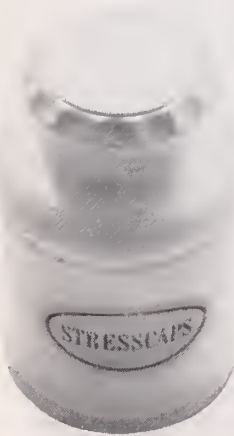
Nominations

Board of Trustees of Group Hospitalization, Inc. Each year the President, on approval of the Executive Board, nominates a representative to fill the vacancy of the member whose term ex-



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pires in the spring of the following year. It is, therefore, recommended that Dr. Karl C. Corley be nominated for a 5-year term to replace Dr. Ralph D. Whitley, whose term will expire in April 1968.

This nomination becomes final if approved at the Annual Business Meeting. Other Society representatives are: Dr. O. Hugh Fulcher (1969), Dr. Josephine Renshaw (1970), Dr. Brooks G. Brown (1971), and Dr. Paul R. Wilner (1972).

Board of Trustees of Medical Service of D. C. The President, with approval of the Executive Board, makes the necessary annual nominations to the Board of Trustees of Medical Service of D. C. The terms of 2 members will expire in the spring of 1968. It is, therefore, recommended that Dr. Russell M. Tilley be nominated for a 3-year term to replace Dr. Frank Pellegrini and that Dr. Howard A. Donald be nominated for a 3-year term to replace Dr. Leonard T. Peterson. These nominations, if approved by the Society, will be presented at the Annual Business Meeting of Medical Service of D. C.

Other Society representatives include: Dr. C. Willard Camalier, Jr. (1969), Dr. Charles E. Bickham (1969), Dr. Edward W. Nicklas (1969), Dr. Jack Kleh (1970), and Dr. Philip H. Philbin (1970).

Health Foundation of D. C. The By-laws of this Foundation (a nonprofit charitable organization to which gifts are tax-deductible) provide that the 11 Board of Directors be named by the Medical Society. The Board must include the Medical Society's President, President-elect, and Secretary-Treasurer, plus a dentist, a pharmacist, and a registered nurse.

It is recommended that the following be approved as members of the Board of Directors of Health Foundation of D. C. for 1 year, or until their successors are named:

Henry D. Ecker, M.D. (Society President)
 William S. McCune, M.D. (Society President-elect)
 George W. Cooley (Society Secretary-Treasurer)
 Wilfred Dudley, D.D.S.
 John R. McHugh, Pharmacist
 Grace Matthews, R.N.
 Roland B. Scott, M.D.
 Marvin C. Korengold, M.D.
 Edward W. Nicklas, M.D.
 Mr. Renah Camalier
 Mrs. Jane Yates

Budget for 1968

The proposed budget for 1968 appears on pages 62-63. As set forth by the Secretary-

Treasurer, it shows a potential loss of \$10,700.00, \$4,500.00 in the General Fund and \$6,200.00 in the Building Fund. The first reaction of the Executive Board was to request an increase in the dues of Active members. The new headquarters, with planned construction for almost any possible requirements of the Society, has offered many more services and conveniences than 1718 M Street, but it does cost more to operate.

The Board and House and Building Fund Committee have sought to conserve expenditures, with full recognition that in this change in headquarters it may be necessary to increase dues even though in the long run the Society's financial position will be greatly strengthened. We have substantially increased our assets, but, as we all know, assets don't pay bills. For 1968, then, it is the hope of the Board members that the Secretary-Treasurer can hold any loss to a minimum; he will have more experience with the new headquarters on which to base recommendations for 1969 and subsequent years.

At this time, then, despite a potential year-end "red" figure, we hope to hold the line. This does not rule out an increase at a later date nor does it rule out a change in unforeseeable situations.

Relative Value Study Committee

With final approval of a Relative Value Scale, this Committee's work under the chairmanship of Dr. Philbin has been less pressing. It has, however, approved 4 changes in the Scale, which were confirmed by the Executive Board. These are:

1. Add 9866, "psychotherapy treatment, office of hospital, verbal, drug-augmented or other method," per "psychiatric hour" (50 min.)

15 Units

2. Change 9930, monitoring of heart-lung machine at open heart surgery, from I.C. to: per hour

15 Units

3. Add 2330, "Coronary cineangiography with injection of contrast media"

50 Units

4. In 2336 delete present terminology, "combined right and left heart catheterization" and replace with "including selective angiocardigram or aortogram," thereby relating it to 2335 28 Units

Additional changes in psychiatry and otolaryngology are under consideration and should be reported on soon.

Much debate has occurred over the use of "usual and customary" fees with the Relative Value Scale as a guide to Medical Service of D. C. in reviewing such fees. Any perusal of

literature indicates increasing use of this method of payment by prepayment plans. It is used in this area only for certain programs and was recently opposed on an overall basis by the Participating Physicians of Medical Service of D. C.

The Executive Board is concerned over the deteriorating relationship between our physician-members and Medical Service of D. C. It is the belief of the Board members that much of this change of attitude is due to misunderstanding and a lack of effective communication. Neither situation has a simple solution, but both must be resolved. At this point the Executive Board intends to take a direct active interest in Blue

Shield and Blue Cross in coöperation with area medical societies that indicate a similar interest.

New Members

The applications of all new members are acted upon by the Executive Board on the recommendation of the Board of Credentials. Board-approval constitutes election to a 1-year provisional membership status. Therefore, at each Annual Business Meeting the Board presents the names of those members whose provisional term is expiring. Following this report 87 Active, 32 Associate, and 4 Resident-Intern members will be voted to full membership.

KARL C. CORLEY, M.D.

Chairman, Executive Board

Report of the Secretary-Treasurer

IT IS THE RESPONSIBILITY of the Secretary-Treasurer, who is also the administrative executive, to report on fiscal and general activities of the Medical Society. In view of last year's adverse reaction to my attempt at a bit of humor in this report, I shall try to hold to the facts as I see them.

Membership

The population growth of the outlying areas in Maryland and Virginia continues to lead the Nation; therefore it is understandable why the Active membership of this Society continues at a rather constant level. The number of physicians listed for the District as full time on hospital staffs, teaching in our medical schools, and in non-Federal administration is about 600, and those in private practice number approximately 1,500, making about 2,300 potential Active members. Some of these, of course, are eligible for Associate membership and may now be in that category.

<i>Year</i>	<i>Active Members</i>	<i>Total Members</i>
1967	1,595	2,440
1966	1,555	2,444
1965	1,518	2,421
1964	1,535	2,313
1963	1,532	2,275
1962	1,505	2,260
1961	1,485	2,233

Active membership is most important, because the financing of general Society activities must come from the dues of Active members. It seems reasonable, then, that these dues will increase as

long as salaries of Federal Government employees increase, because it is the Government with whom we and all non-Government organizations must compete for personnel. The constant pronouncements of Mr. Macy of Civil Service and those members of Congress who support him are simply not true. Federal office employees are the best paid such employees in the District. We compete with them, not they with us, and we are never able to quite reach their pay increases.

Activities in New Headquarters

Building a new Society headquarters had pluses and minuses. On the plus side are the fine meeting and parking space for the Society's Committee and meeting space for some Sections and allied health agencies. This is good professional and public relations. On the minus side are the lack of adequate parking space for members of all Sections and other groups, the increased cost for building maintenance, and the mortgage. In regard to meeting space and parking, a policy statement on use of the building was adopted at the 1966 Business Meeting and continues in effect. So do not be irate if you cannot always park in the building; plenty of space is available within 1 block, on 20th, on Eye Street, and on K Street.

Allied or related health groups using the headquarters for meetings include: The D. C. Division of the American Cancer Society, Washington Heart Association, Multiple Sclerosis Society, American Federation for Clinical Research, D. C. Society of Internal Medicine, Pastoral Institute,

Society for Prevention of Blindness, Washington Orthopedic Club, Washington Psychiatric Society, Washington Psychoanalytic Society, Washington School of Psychiatry, D. C. Society of Radiologic Technologists, D. C. Nurses Association, and, of course, a number of Specialty Sections.

The number of meetings held in the Society headquarters continues at about the same pace as last year: 365 meetings the first 10 months of 1966 and 375 meetings for this same period of 1967. Over 100 of these were committee meetings; 120 were Section and Specialty meetings; 6 were large, jointly sponsored conferences; and 148 were meetings of allied or related groups. Most meetings were during the day: 234 day and 141 night.

The Medical Bureau

For the first time in at least 6 years the total recorded calls of the MEDICAL BUREAU seems to have decreased. Recorded calls represent less than half the number of calls handled by the operators, but they are our only means of measuring activity. The number of physicians served continues to increase slightly each year as does the number of operators.

Year	Recorded Calls	Physicians	Operators
1967	960,000 (estimate)	830	39
1966	977,000	824	36
1965	970,000	810	32
1964	916,000	787	32
1963	822,000	775	30
1962	768,000	773	29
1961	676,000	773	27

In an effort to improve service 2 major changes have been made. First, additional operators have been employed on the evening shift so as to permit the supervisor to actually supervise instead of directing from one of the 9 positions. Second, 4 new lines have been installed for "physicians only" so those with the "if no answer" service may check in or out on private lines. Another change has been from manual billing to automated billing. By January 1, 1968 all bills will be bimonthly and machine-processed. This saves personnel time by eliminating posting, etc., and provides us a full bimonthly report on delinquent accounts.

A new "Referral List" has been completed on visible index cards with more detailed data than kept previously. A record number of members, over 500, have replied and offered their services. This is a distinct credit to the "public service" attitude of those who did reply and would seem to

to reflect a recognition that they and the Society must accept the responsibility of providing the public with as wide a range of names as possible. It is estimated that some 40,000 referrals will be handled this year. The replies of these members are most appreciated and it is hoped more of you will cooperate in this service to the public.

Last year's increase in rates (\$2.00 per month) should enable the BUREAU to continue to compete for operators with the Government and the Telephone Company for at least 1 and perhaps 2 more years. It all depends upon how much the Federal Government continues its inflationary tactics of a 5 per cent plus annual salary increase for its employees.

The Medical Annals

For the first time since 1961 it seems that there is a chance for the MEDICAL ANNALS to bring its expenses within reasonable reach of income. A decrease from a dues allocation of some \$22,000 in 1962 to an estimated allocation of less than \$15,000 for 1967 is at least a step in the right direction. Advertising rates were raised in 1966 and again this year. Despite this, the number of pages of advertising has increased thereby permitting more pages of text, since the number of text pages permitted relates directly to the number of ad pages sold.

Consideration is being given to using a less expensive printer if a reasonable quality of printing can be assured. Waverly Press is certainly the best, but it is also more expensive than some printers in Virginia and North Carolina. The use of a printer located at a distance raises some logistics questions which would need to be resolved. One of the questions facing the Executive Board is, can this Society afford the best? If the number of pages of advertising continues we can reach a proper income and expense balance; if this declines, as it did from 1960 to 1966, then some solution must be sought. During the year Dr. Wallace M. Yater, Editor, and Miss A. Louise Eckburg, Assistant Editor, cooperated in every way possible to reduce the dues allocation.

The Editor has been very successful in continuing the series of special issues with scientific material supplied by staff members of medical institutions in the Washington Metropolitan Area, which was begun in 1959. During the past year the material for these special issues has been supplied, through the cooperation of the Consulting Editors, by Georgetown and George Washington University Schools of Medicine, the National

Institutes of Health, the Veterans Administration, and Howard University College of Medicine. Material for special issues has also been supplied by the Washington Hospital Center and Columbia Hospital for Women. The Executive Board authorized that the September issue be dedicated to Dr. Yater in recognition of his 35 years' service as Editor of the ANNALS.

Society Finances

The Society's financial condition has remained stable since the last dues increase for Active members (\$15.00 in 1964). Total income and expense handled by the staff will come close to \$1,000,000 for 1967. Total assets by the end of the year should be close to \$1,500,000 less, of course, the mortgage balance of \$456,000 (5 per cent). To offset the mortgage is \$120,000 still due on the sale of the 1718 M Street property. In the long run the Society's economic condition seems sound and should improve as the mortgage decreases.

The next few years, however, will find a heavy burden on dues, in part to increase staff and maintain adequate salary levels and in part to meet mortgage payments and increased maintenance costs. The Society allocates \$4.50 to \$5.00 a square foot for space, the same as is asked of those sharing the building.

The number of office staff members (10) has not increased since Mr. Wiprud left in 1962. Now, with more and more work required for members, committees, and the general administration of both programs and building, at least 1 staff member should be added. It is evident that over many years both the MEDICAL BUREAU and the Medical Society have become widely known. As a result the public, various agencies (private and governmental), business firms, and even the members turn here for information. It requires the time of almost 2 staff members to handle such calls. This makes for a good public image, but it does require financing from dues. So too does the use of the headquarters for meetings of other groups. This use of the building also requires additional staff time and effort, which again must be paid for in part from dues.

You will note potential net losses in the estimate of income and expense for 1967 and 1968. These are not major losses, but in times of prosperity such as these are the Society should seek to build its reserves and not to reduce reserves to cover losses. The Executive Board will be kept apprised quarterly of income and expense status in the event any change occurs.

GEORGE W. COOLEY
Secretary-Treasurer

Proposed Budget 1968

I. GENERAL FUND INCOME

A. Dues

1. Active and Special	\$120,000.00	
2. Associate	16,000.00	
3. Resident-Intern	150.00	
4. In arrears	250.00	\$136,400.00

B. Other Income

1. Scientific Assembly	\$12,000.00	
2. Property sale	15,000.00	
3. Interest on savings	3,000.00	
4. Miscellaneous	250.00	30,250.00

TOTAL GENERAL FUND INCOME

\$166,650.00

C. Reimbursables

1. Cancer Morbidity Study	\$8,100.00	
2. AMA Dues	75,000.00	
3. Blue Cross/Blue Shield	240,000.00	
4. Member and Agency services	7,500.00	
5. Miscellaneous	2,500.00	333,100.00

TOTAL GENERAL FUND INCOME AND REIMBURSABLES

\$499,750.00

II. GENERAL FUND EXPENSES

A. Society Programs

1. Medical Annals subsidy	\$15,000.00	
2. Scientific Assembly	12,000.00	
3. Committee activities, travel to meetings, newsletter, publications, etc.	8,850.00	
4. Assembly and membership luncheons	2,000.00	
5. Special projects	2,000.00	
6. Public relations	3,000.00	
7. Exhibit Hall and meeting-room space	20,000.00	\$62,850.00

B. Office Staffing			
1. Salaries	\$68,000.00		
2. Legal Counsel and Audit	3,500.00		
3. Retirement, Insurance and Social Security	8,600.00		
4. Secretary and Staff expenses	1,600.00	81,700.00	
C. Office Operation			
1. Postage, supplies and equipment	\$8,000.00		
2. Telephone and Telegraph	3,600.00		
3. Office space	15,000.00	26,600.00	
TOTAL GENERAL FUND EXPENSES	\$171,150.00	\$171,150.00	
TOTAL GENERAL FUND INCOME	166,650.00		
EXCESS OF EXPENSES OVER INCOME	\$4,500.00		
D. Reimbursables			
1. Cancer Morbidity Study	\$8,100.00		
2. AMA Dues	75,000.00		
3. Blue Cross/Blue Shield	240,000.00		
4. Member and Agency services	7,500.00		
5. Miscellaneous	100.00	330,700.00	
TOTAL GENERAL FUND EXPENSES AND REIMBURSABLES		\$501,850.00	
III. MEDICAL ANNALS INCOME			
1. Advertising, subscriptions, etc.	\$53,000.00		
2. Subsidy from General Fund	15,000.00		
3. Miscellaneous	100.00	\$68,100.00	
IV. MEDICAL ANNALS EXPENSES			
1. Salaries and honorarium	\$18,900.00		
2. Retirement, Insurance and Social Security	1,700.00		
3. Printing and engravings	46,500.00		
4. Supplies and postage	500.00		
5. Miscellaneous	1,500.00	69,100.00	
EXCESS OF EXPENSES OVER INCOME		\$1,000.00	
V. MEDICAL BUREAU INCOME			
1. Alternate Listings	\$50,000.00		
2. Telephone Secretarial Service	140,000.00		
3. Interest and Miscellaneous	125.00	\$190,125.00	
VI. MEDICAL BUREAU EXPENSES			
1. Admin. Salaries	\$8,000.00		
2. Operators Salaries	130,000.00		
3. Retirement, Insurance and Social Security	13,200.00		
4. Telephone and Directory	23,000.00		
5. Equipment, Supplies, Postage	2,200.00		
6. Maintenance, Utilities and Space	5,000.00		
7. Miscellaneous	500.00	181,900.00	
EXCESS OF INCOME OVER EXPENSES		\$8,225.00	
VII. BUILDING FUND INCOME			
General Operations			
1. Space (leased)	\$37,000.00		
2. Interest	2,500.00		
3. Medical Bureau Space	5,000.00		
4. General Fund (office and meeting space)	35,000.00	\$79,500.00	
VIII. BUILDING FUND EXPENSES			
A. Operations and Maintenance			
1. Wages	\$12,000.00		
2. Utilities	7,500.00		
3. Supplies and Repairs	2,500.00		
4. Service Contracts	9,000.00		
5. Fuel	4,000.00		
6. Insurance and Social Security	3,050.00	\$38,050.00	
B. Loan Payments			
1. Mortgage	\$25,000.00		
2. Interest	22,650.00	47,650.00	85,700.00
EXCESS OF EXPENSES OVER INCOME			\$6,200.00



Photo professionally posed.

No injection after all! This penicillin produces high, fast levels—orally.

Pen·Vee® K is usually so rapidly and completely absorbed that therapeutic penicillin levels are attained within 15 to 30 minutes. Thus it can often obviate the need for penicillin injections. The higher serum levels produced generally last longer than with those of oral penicillin G.

Indications: Infections susceptible to oral penicillin G: prophylaxis and treatment of streptococcal infections; treatment of pneumococcal, gonococcal, and susceptible staphylococcal infections; prophylaxis of rheumatic fever in patients with a previous history of the disease.

Contraindications: Infections caused by nonsusceptible organisms; history of penicillin sensitivity.

Warnings: Acute anaphylaxis (may prove fatal unless promptly controlled) is rare but more frequent in patients with previous penicillin sensitivity, bronchial asthma or other allergies. Resuscitative (epinephrine, aminophylline, pressor amines) and supportive (antihistamines, methylprednisolone sodium succinate) drugs should be readily available. Other rare hypersensitivity reactions include nephropathy, hemolytic anemia, leucopenia and thrombocytopenia.

In suspected hypersensitivity, evaluation of renal and hematopoietic systems is recommended.

Precautions: In suspected staphylococcal infections, perform proper laboratory studies including sensitivity tests. If overgrowth of nonsusceptible organisms occurs (constant observation is essential), discontinue penicillin and take appropriate measures. Whenever allergic reactions occur, withdraw penicillin unless condition being treated is considered life threatening and amenable only to penicillin. Penicillin may delay or prevent appearance of primary syphilitic lesions. Gonorrhea patients suspected of concurrent syphilis should be tested serologically for at least 3 months. When lesions of primary syphilis are suspected, dark-field examination should precede use of penicillin. Treat beta-hemolytic streptococcal infections with full therapeutic dosage for at least 10 days to prevent rheumatic fever or glomerulonephritis. In staphylococcal infections, perform surgery as indicated.

Adverse Reactions: (Penicillin has significant index of sensitization): Skin rashes, ranging from maculopapular eruptions to exfoliative dermatitis; urticaria; serum sickness-like reactions, including chills, fever, edema, arthralgia and prostration. Severe and often fatal anaphylaxis has been reported (see "Warnings").

Composition: Tablets—125 mg. (200,000 units), 250 mg. (400,000 units), 500 mg. (800,000 units); Liquid—125 mg. (200,000 units) and 250 mg. (400,000 units) per 5 cc.

Wyeth Laboratories Philadelphia, Pa.

ORAL **PEN·VEE® K**
(potassium phenoxymethyl penicillin) 

Report of the Board of Credentials

SINCE the last Annual Business Meeting, November 20, 1966, this Board has interviewed 123 applicants for membership. This is the third consecutive year in which the number of new members interviewed has declined. There were 152 applicants in 1965 and 127 in 1966. This would seem to support the Report of the Secretary-Treasurer that membership continues at a rather constant level.

The change in the Constitution and By-laws permitting licensed Associate members who are noncitizens to transfer to Active membership has resulted in 22 such members transferring to Active status.

During the coming year it is planned by the Membership Committee to seek some means of further recognition of new members. This Board concurs in this plan. It also concurs in the objective of the Membership Committee to encourage physicians who are not members to join the Society.

Finally, we should like to express our feelings of loss in the death of the Chairman, Dr. Michael J. McInerney. He combined a probing mind with a gracious attitude in the questioning of applicants.

PHILIP R. JAMES, M.D., *Vice Chairman*
 JACK KLEH, M.D.
 SEYMOUR ALPERT, M.D.
 WILLIAM S. COLE, M.D.
 EDWARD E. FERGUSON, M.D.

The Annual Awards

THE ANNUAL MEMBERSHIP LUNCHEON, November 21, 1967, during the Medical Society's ANNUAL SCIENTIFIC ASSEMBLY at the Hotel Statler-Hilton, was highlighted by the presentation of the annual awards for medical and community health service. Dr. Henry D. Ecker, President of the Society, who presided at the luncheon meeting, called on Dr. Warren D. Brill, Chairman of the Society's Committee on Public Information and Education, to present the special awards.

Certificate for Meritorious Service. This award "in recognition of distinguished service to his profession," was given to Dr. Edgar W. Davis, a pioneer in the field of thoracic surgery, who brought to the Nation's Capital in 1936 his skillful techniques and knowledge "that enabled many citizens of this community to benefit from surgical procedures not then available in many areas of the United States." He was the first

Professor of Thoracic Surgery at both the George Washington and the Georgetown University Schools of Medicine. He performed the first successful operation for cancer of the lung and the first successful surgical closure of a patent ductus. Other "firsts" included mitral commissurotomy, closure of an atrial septal defect, and open heart surgery under hypothermia anesthesia. He also pioneered in the surgical correction of congenital defects in children, such as chest wall deformities, tracheo-esophageal fistula, etc.



DR. EDGAR W. DAVIS (left) accepts the Medical Society's Certificate for Meritorious Service from Dr. Warren D. Brill, Chairman of the Society's Committee on Public Information and Education, at the Hotel Statler-Hilton, November 21, 1967. Kathleen Davis was present to share the memorable occasion with her father.

He is a Past Regent of the American College of Chest Physicians, Past President of the Southern Thoracic Surgical Association, Past President of the Medical Board of the Washington Hospital Center and of the Research Foundation of Children's Hospital. He was a Founder of the latter and co-author with Dr. Preston A. McLendon of the articles of corporation of the Foundation.

John Benjamin Nichols Lay Award. For 1967 there were 2 recipients of this award, Mrs. George Hyman and the Crippled Children's Society of D.C.

As a result of the generosity of Mrs. Hyman and her late husband, the George Hyman Memorial Research Building at the Washington Hospital Center came into being and now houses an active research program in clinical pharmacology, ophthalmology, cardiovascular surgery, and basic research. In addition to this facility, the George and Sadie Hyman Clinical Research Unit for inpatient observation is also in operation at the Center. Mrs. Hyman is an active member of the Board of Trustees of the Washington Hospital Center and the Research Foundation.

For 34 years the Crippled Children's Society has provided many invaluable services for the children of the District of Columbia. These have included physical

evaluation, corrective therapy, speech therapy, educational programs, and social guidance, thus enabling thousands of youngsters to overcome their disabilities and to take their rightful place in society.



PARTICIPATING IN AWARDS CEREMONIES at the Medical Society's Annual Membership Luncheon, November 21, were (left to right): Dr. Henry D. Ecker, President of the Society; Dr. Margaret M. Kenrick, recipient of the Robins' Community Service Award; Dr. Warren D. Brill, who presented the awards; and Mrs. George Hyman, who shared the John Benjamin Nichols Award for laymen with the Crippled Children's Society of D. C.

Community Service Award. Through the courtesy of the A. H. Robins Company, of Richmond, Va., an award is made each year to a physician for outstanding community service. This year's awardee was Dr. Margaret M. Kenrick, who is Associate Professor of Medicine and Chairman of the Department of Physical Medicine and Rehabilitation at the Georgetown University School of Medicine and Hospital. Dr. Kenrick has served on the Medical Advisory Board of the United Cerebral Palsy of Washington, D. C. since 1959, the Medical Advisory Board of the National Foundation since 1964, the Medical Board of the Multiple Sclerosis Association of Greater Washington, the Board of Directors of the National Paraplegic Foundation and the D. C. Chapter, and has been Medical Consultant to Open Door. She has also labored to keep the disabled mobile and has lobbied consistently for architectural modifications that would provide the handicapped with easy access to buildings and public facilities.

Scientific Exhibit Awards

Dr. Raymond A. Osbourn, in charge of the Scientific Exhibit for the ASSEMBLY, presented certificates to the following award-winners:

First Award: Drs. Paul E. Shorb, Jr., and Jerome W. Canter, Department of Surgery, George Washington University School of Medicine, for their exhibit on "Experimental Peptic Ulcer."

Second Award: Drs. Charles A. Hufnagel and Peter W. Conrad, of Georgetown University Hospital, for their exhibit on "The Use of a Covered Suture Tech-

nique for the Placement of Aortic and Mitral Valvular Prostheses."

Third Award: Dr. Robert J. Sherman, for his exhibit on "I.U.C.D.—Advances in 1967."

Four exhibits were cited for Honorable Mention. They were:

"Silicone in Plastic Surgery," Dr. J. Gordon Bell, Chief of Plastic Surgery, Doctors Hospital.

"Conjoined Twins—Obstetrical and Surgical Problems," Dr. George B. Callahan, of Victory Memorial and St. Therese Hospitals, Waukegan, Illinois.

"Lesions of the Palate," Colonel William G. Sprague, USAF, DC, and Major James K. Jacoby, USAF, DC, Armed Forces Institute of Pathology.

"Sarcomas of the Uterus," Dr. Herbert Taylor, Lt. Commander Luther A. Youngs III, MC, USN, and Dr. Henry J. Norris, Armed Forces Institute of Pathology.

▶ DOCPAC BRIEFS

or

Are You a 1968 Member?

IN NOVEMBER, 1964 the interests of American medicine were trampled in the general election stampede that sent 43 new, unfriendly-to-medicine members to the House of Representatives. The 89th Congress in 1965 enacted more important health-oriented legislation than ever before, including Medicare, the Heart, Cancer, and Stroke Bill, Comprehensive Health Facilities Planning Bill, and new control over drugs. The opinions of the medical profession were not regarded.

Today, the Medicare fight is history. So is the 89th Congress. But still we physicians must be on the alert. At this moment the House Ways and Means Committee is considering major revisions of Medicare and extensions of it. Senator Hart of Michigan is pressing a medical restraint trade bill to outlaw many traditional medical practices. Serious consideration is being entertained of a new law to restrict the manufacture and use of medical instruments, heart valves, hip pins, catheters, and all other medical devices. We can stay out of politics when politics gets out of medicine.

In 1961 the AMA, recognizing the need to protect the medical profession in future legislation, suggested that we become involved in a political way. Thus, AMPAC was formed. The American Medical Political Action Committee, along with DOCPAC (or District of Columbia Political Action Committee), is a bipartisan

organization with a 2-fold purpose: to inform the public and profession on legislative matters and to elect members to the Federal Congress who are in sympathy with the objectives of the medical profession by contributing to political campaigns. In its 1967 membership drive DOCPAC was ahead of 1966, but still many members of the Medical Society of the District of Columbia do not belong. Dues are \$20 per year and they are used in the most effective way possible to help medicine. DOCPAC gives us an opportunity to exert some additional collective medical muscle.

Have you joined? Every member of the Medical Society of the District of Columbia should be a member. Send your \$20 dues now to DOCPAC, 825 New Hampshire Avenue, N.W., Washington, D. C. 20037.

WILLIAM H. COOPER, M.D.
*Chairman, D. C. Political
Action Committee*

► HEALTH DEPARTMENT NOTES

Crippled Children's Services

THE PROGRAM FOR CRIPPLED CHILDREN has been functioning as a part of the D. C. Department of Public Health since July 1, 1937, when responsibility for it was relinquished by the Board of Public Welfare. The Crippled Children's Services Division is supervised by the Health Department's Bureau of Maternal and Child Health.

The Health Department's program for crippled children is comprehensive, ranging over a wide field, of services for existing handicaps and conditions which cause handicaps. The Department is charged with the responsibility of seeking out children with known or suspected handicaps and making available diagnostic services and treatment which, hopefully, will provide opportunities for each child to lead a happy and productive life.

The register of physically handicapped children, maintained by the Health Department since the inception of the program some 30 years ago, covers only those children who have received some type of care from the Crippled Children's Services Division. The register contained 1,051 names on December 31, 1938. In June of 1967 the names of approximately 80,000 handicapped children were listed by the Department.

Dangers of Unattended Medications

A NURSING STUDENT recently came to a psychiatrist. She stated that the main reason for coming was that her supply of amphetamine had been cut off and that she was afraid of the consequences, but she appeared to be relieved as well as apprehensive. The source of supply had been medicine cabinets and anesthesiologists' medication carriers left unattended with medications in plain view. She had been able to build up her drug usage level to 10 ampules of Methedrine® per day.

COMMITTEE ON PROBLEMS
OF DRUG DEPENDENCE
Washington Psychiatric Society

N.B. The Committee would appreciate it if members of the D. C. Medical Society will comment on or relate their experiences concerning problems of drug abuse or misuse.

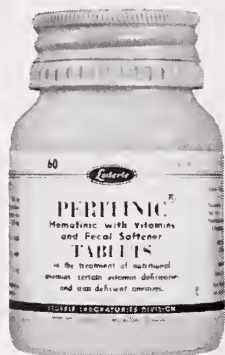
A review of diagnoses of children hospitalized under public funds, made only a year or two after the establishment of the program, revealed a relatively large incidence of acute rheumatic fever or heart disease. It was decided to incorporate names of youngsters thus afflicted in the register of handicapped children. Funds had been secured by 1941 and care for this type of patient was provided.

Over the intervening years other handicaps have been added to the list treated under this program. At the present time they include speech, hearing, and visual defects, neurological problems, cerebral palsy, cleft lip, cleft palate and other dentofacial handicaps, allergies, and mental retardation. In addition, a varied group of handicapping conditions including congenital deformities, various metabolic and endocrine disturbances, and other conditions of long-term and disturbing nature come under the program.

An outpatient clinic for crippled children was opened at Gallinger Hospital (now D. C. General Hospital) in August 1938. Diagnosis and treatment became available for ambulatory patients not requiring hospitalization as well as follow-up care for patients released after hospital treatment.

This service for handicapped youngsters was expanded in December 1939 with the opening of the Crippled Children's Unit offering care both

anticoptive* hematinic



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Hematinic with Vitamins and Fecal Softener

A tablet-a-day provides:

● Elemental Iron (as Ferrous Fumarate)	100 mg
● Dioctyl Sodium Sulfosuccinate (to counteract constipating effect of iron)	100 mg
Vitamin B ₁	7.5 mg
Vitamin B ₂	7.5 mg
Vitamin B ₆	7.5 mg
Vitamin B ₁₂	50 mcgm
Vitamin C	200 mg
Niacinamide	30 mg
Folic Acid	0.05 mg
Pantothenic Acid	15 mg

Bottles of 60



anticoptive, *adj.* (*anti* opposed to + *costive* causing constipation.) Against constipation. (Now isn't that a good idea in an iron-containing hematinic? We'll send you samples if you'll send a request on your Rx blank, addressed to Department 150.)



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for hospital patients and outpatients at Gallinger. An occupational and physiotherapy unit was included, and schooling and library services for children confined there were provided by the D. C. Public Schools and the Public Library.

This Unit became the focal point of the Health Department's program for diagnosis, treatment and rehabilitation of children with crippling or potentially crippling conditions. In 1951 the Crippled Children's Unit moved into the new \$2,000,000 Children's Building at D. C. General Hospital which it shares with the Acute Pediatric Unit. The Hospital provides basic services in the 74-bed facility while the Bureau of Maternal and Child Health is responsible for the program of medical care and rehabilitation.

A full range of services is offered in the Unit and surgery is performed there. Two prosthetists are members of the Unit staff and a program is carried on for amputees up to age 21. All outpatient services are free to handicapped children, and patients may be admitted to the Hospital under the Crippled Children's Program whether or not they are indigent. Referrals of children suspected or known to have crippling conditions are welcomed by the Crippled Children's Services Division staff.

Adjunct clinics offering services for handicapped patients who are ambulatory are available at Gales Clinic Building, 65 Massachusetts Avenue, N.W. These outpatient services include cardiac, eye, audiology, allergy, and mental retardation clinics.

Some treatment services also are supplied at the Melvin Sharpe Health School, 4300 13th Street, N.W., where handicapped pupils from all over the city attend school. Especially designed to serve the physically handicapped, the building provides a variety of special features for their care, comfort and convenience, such as ramps for wheelchair patients. Physical and occupational therapists from the Health Department are assigned daily to the School's therapy room.

A number of Health Department programs have as their objectives the birth of normal healthy babies and the maintenance of maximum good health of all children. Inevitably, however, there will be some children in whom various factors combine to cause crippling conditions. The goal of the Crippled Children's Services Division is to eliminate wherever possible the problems faced by these children and to deal constructively with those problems that cannot be corrected.

MURRAY GRANT, M.D., D.P.H.
D. C. Director of Public Health

Question of the Month

The professional liability rates in the District of Columbia are higher than those of Maryland and Virginia and of most states. Various reasons are given for this situation. What do you believe are the causes?

Answers and Comments

LEONARD T. PETERSON, M.D. (Orthopedic Surgery): In determining the rates for professional liability the entire State of Maryland or Virginia is considered an entity. Since rural areas are included the rates are lower than the rates applied to a densely populated metropolitan area. The District of Columbia has a high density of hospitals for the population since these hospitals serve the metropolitan area. Hospital cases are more serious in nature than an equal number of outpatients and are more likely to involve litigation. Other contributing factors are migratory population, ethnic groups, and composition of the juries.

Analysis of claims in the densely settled suburban areas surrounding Washington as distinct from the states as a whole would reveal that claims are comparable to the rate in the District. Patients and lawyers in the metropolitan area live in a highly competitive society. It is much easier to initiate claims against the physician here than in rural or suburban areas where the personal relationship and physician image are more favorable.

Unfortunately, patients have been led to believe that modern medicine, if properly applied, can cure all ailments. They go to get well; if treatment fails they do not understand the limitation of treatment and the unavoidable complications. Dissatisfaction with the fee and misunderstandings which arise in physician-patient relationship may precipitate a claim which would not otherwise be made.

SAMUEL M. BECKER, M.D. (Internal Medicine): The insurance carrier claims that the amounts paid out in litigation and "settlement" of these claims for negligence approach or exceed the total premium payments; they claim that this is greatly out of proportion to an arrangement to continue to cover these insurance claims based on the present premiums.

In another state the experience in this field has been such that the average premium approaches \$75.00 per doctor with an adequate coverage in each case. They claim that this is based on the fact that they do not allow "nuisance value payments." I note that in the District of Columbia there has been a great leaning toward paying nuisance value claims, which eventually add up to a large portion of the collected premium, and eventually very little, if any, profit or assets remain whereby the carrier can continue to write such insurance.

If there is any real substance to the "claim" it should be settled as soon as possible at as low a price as is possible. Nuisance value claims should be rejected. This approach has not been tried in this jurisdiction. Nuisance value payments fulminate such negligence claims and should be discouraged.

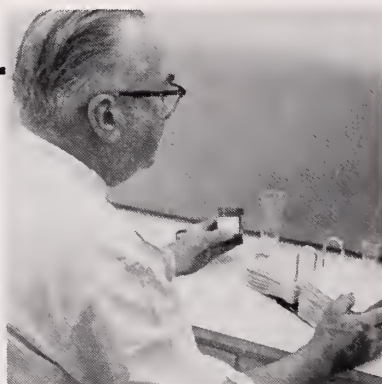
Another plausible explanation for such high rates here is that the average doctor is not acquainted with the medicolegal aspects of such professional liability pitfalls, and instructions, both written and by lecture, would bring this situation directly to the most concerned party, the doctor. Such instruction should be the duty of the Medical Society, as it is in other state societies; Rhode Island, for instance, gives the doctor much literature about this. The experience there has paid off in much lower premiums based on much lower claim ratio and payouts.

PAULA R. KAISER, M.D. (Anesthesiology): A more sophisticated group of patients, more suit-conscious as, e.g., in New York and California.

BROOKS G. BROWN, M.D. (Surgery): I am under the impression that the District of Columbia is among the first 3 states in frequency of suits. There is what seems to be an increasing tendency to settle suits with a resultant increase in premiums.

Count the Prescriptions filled by Peoples Drug Stores and you get 100 million times people have counted on Peoples

We have passed the hundred million mark. That's the number of prescriptions filled by all Peoples Drug Stores since we opened our doors in 1905. We say this with great pride, since this impressive figure illustrates an impressive public confidence. Because behind all prescribed medicine at Peoples is confidence — in the physician who prescribes, the manufacturer who supplies, and the pharmacist who fills the prescription. At Peoples, nothing is more important to us than this confidence.



PEOPLES

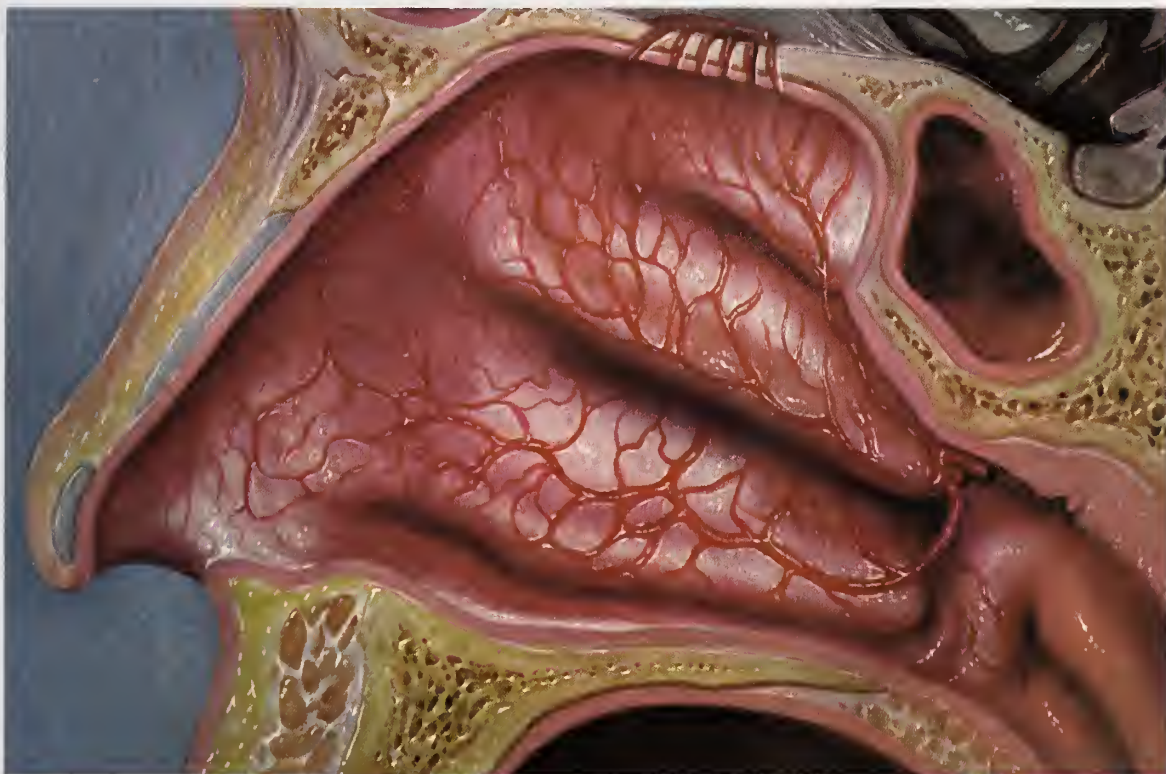
PRESCRIPTION DRUG STORES

DORSEY

winter 1968

Season

A journal within a journal published quarterly in the interests of better medicine by Dorsey Laboratories, a division of The Wander Company, Lincoln, Nebraska 68501. Address communications to Keith W. Sehnert, M.D., Medical Director.



this issue: the cold in pregnancy...

the cold in pregnancy

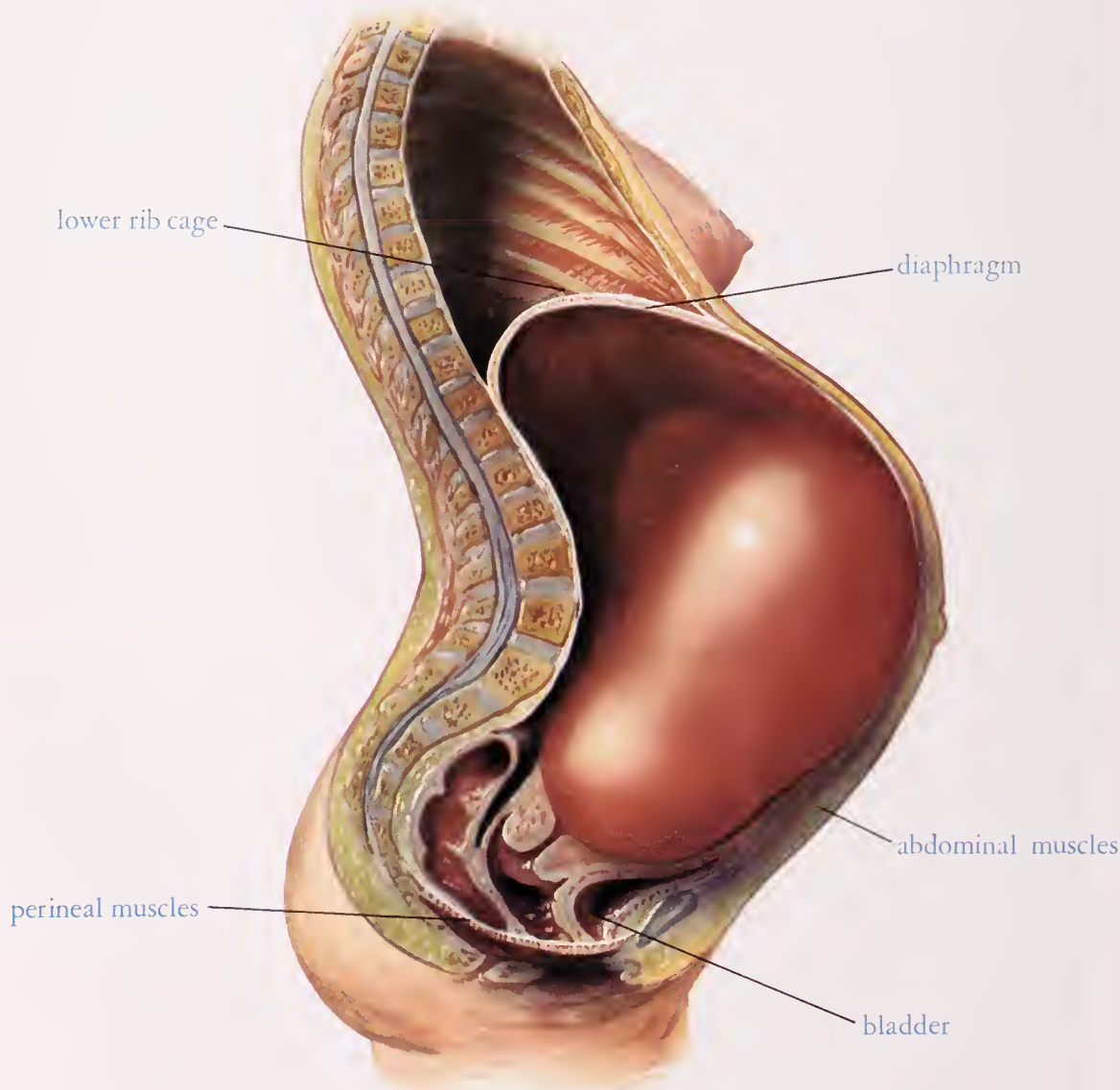
Frederick W. Goodrich, Jr., M.D.

Senior Obstetrician and Gynecologist, Lawrence and Memorial Hospital, New London, Connecticut

Since pregnancy and the common cold are both ubiquitous, it is not surprising that they often occur at the same time in the same patient. Incidence figures are hard to come by, but the chances are very good that any given pregnant woman will have a cold at some time during the nine months of her gestation. When she does, she will tell you that it is the worst cold she ever had. It seems to last longer and the symptoms are more distressing than they are in the non-pregnant.

For purposes of this discussion, the common cold is considered to be the well-known symptom complex which includes sore throat, stuffy nose, and a cough. Febrile states or extension of the disease process into the lower respiratory tree are not part of the common cold and will not be included in this discussion.

the clinical picture of a cold in pregnancy can be confused by a long-known physiological phenome-



tion. Kiesselbach's area in the nose (on the anterior part of the nasal septum above the intermaxillary bone) becomes engorged, apparently due to hyperemia induced by the increased estrogen level which accompanies pregnancy. The amount of congestion can vary in degree from woman to woman. Some have very little congestion, others will have occasional nosebleeds from this area, still others will have symptomatic congestion to the degree that they will complain of having a "chronic" or constant cold.

Less well recognized is the occurrence of this type of hyperemia in any part of the nasopharyngeal mucosa, again in varying degree. Such swelling often produces a postnasal drip which, the patient will state, is present only when she is pregnant. Patients who do not have symptomatic congestion ordinarily, will find that when they do get a cold, the symptoms last much longer than those of a cold usually do. Occasionally, this hyperemia is responsible for closure of the medial end of the Eustachian tube; such patients will complain of "plugging" of the ears. Inspection of the ear drum will show a retraction which confirms the presence of Eustachian closure rather than wax in the canal which is the patient's diagnosis. Symptoms related to this physiological congestion are more apt to occur in heavier smokers or those who have a history of allergic rhinitis, just as are the symptoms of the common cold. And when the cold does occur in pregnancy, the symptoms are worse because of the underlying congestion.

The pregnant woman with a cold is miserable for other reasons, dependent somewhat on her parity and the length of her gestation. As parity increases, so also does the relaxation of the abdominal and perineal musculature. The uterus, lying against a back abdominal wall, and bearing down on relaxed perineal muscles, acts like a piston when the patient coughs, sneezes, or even blows her nose, pushing down on the bladder. Stress incontinence during childbirth is almost the rule.

As the length of gestation increases, so does the size of the uterus. As it grows, it pushes the abdominal contents above it and elevates the diaphragm. This results eventually in a lateral displacement of the lower rib cage, often to a point at which the patient will complain of soreness in this area. If such a

(Concluded on following page)

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patient has a cold, the coughing and sneezing will exaggerate this soreness. The diaphragmatic restriction caused by the enlarging uterus also makes breathing more difficult, particularly when the patient lies down. A cold compounds this difficulty.

Treating a cold in pregnancy requires two additional considerations. The patient should be told that the symptoms may last longer lest she become discouraged, and she should be reassured that the treatment will not damage the fetus. Although there are still some women who seem blissfully ignorant regarding matters of health (and these need to be cautioned not to take medication recommended by friends), most of our maternity patients are aware of the thalidomide tragedy. These women need constant reassurance that the symptoms of a cold can be treated, and that the medication is safe. Fortunately, many of the drugs which are of benefit have been in use long enough and widely enough so that such a statement can be offered. Occasionally one encounters a patient who is so anxious to avoid medication that she is extremely reluctant to take anything at all. Since cold is self-limited, it seems reasonable enough to give such a patient the choice and not to force drugs on her if she is obviously afraid of taking them.

The most distressing symptom of the common cold is the nasal congestion. This can be mitigated by the use of a decongestant which will help reduce the postnasal drip and the coughing caused by it. The kind of a cough which is described as a "tickling" in the throat and which is apt to occur when the patient goes to bed is usually due to nasopharyngeal congestion rather than inflammation in the lower respiratory tract.

There are many cough mixtures available. Most contain an antihistamine, a decongestant, and a cough "suppressant." Should cough suppression be desirable, it is important to remember not to use both a decongestant tablet and such a cough mixture as the patient would be getting a double dose of the decongestant. With some patients, the placebo effect of a cough syrup may be important and a liquid preparation might be substituted for an oral tablet.

For a sore throat, candy drops or lozenges at frequent intervals are soothing. It is not only unneces-

sary but unwise to use antibiotic lozenges or drops. The use of antibiotics in an uncomplicated cold is contraindicated and should be scrupulously avoided.

In summary, a cold in pregnancy is more severe and longer lasting. The treatment of the symptoms with local and systemic decongestants will make the patient more comfortable.

apparently the cold is so common in pregnancy that it has received very little attention in the literature. References are almost non-existent and the few which are available add little to the common knowledge, are out-dated, or are not helpful. Thus the usual bibliography is not appended.



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News & Personals

Summary of Executive Board Actions

Proceedings of October 23 Meeting

Dinner for the Board members was served at 6:30 p.m. in the Exhibit Hall of the Medical Society. Dr. Karl C. Corley, Chairman, presided at the meeting. Present were Drs. Frank S. Bacon, C. Willard Camalier, Robert J. Coffey, Henry D. Ecker, Raymond T. Holden, Margaret M. Kenrick, William S. McCune, Edward W. Nicklas, Paul R. Wilner, and Mr. George Cooley, Secretary. Present by invitation was Dr. Thomas W. Mattingly. The meeting was called to order by Dr. Corley at 7:15 p.m.

The minutes of the meeting of September 25, 1967 were approved as mailed.

Committee Meetings: The Secretary reported that the following meetings had been held since the last meeting of the Board:

- | | |
|--------------|---|
| September 26 | Ad Hoc Committee on Licensure |
| 27 | Board of Credentials |
| 27 | Committee on Liaison with the Woman's Auxiliary |
| October 4 | Fee Review Committee |
| 5 | Committee on Communicable Diseases |
| 5 | Committee on Blood Banks |
| 9 | Committee on Emergency Medical Service |
| 11 | Board of Credentials |
| 17 | Grievance Committee |
| 18 | Committee on Blood Banks |
| 19 | Committee on Environmental Health |

Board of Credentials: On recommendation of the Board of Credentials, 23 applicants were elected to Active membership, 4 to Associate membership, and 2 to Resident-Intern membership. Their names appear on page 768 of the December 1967 issue of the *MEDICAL ANNALS*.

P. L. 89-239: Dr. Mattingly, Program Coordinator, was present to report on various problems encountered and progress made in the planning stages of P.L. 89-239. He reported in detail on the organizational structure and submitted a copy to each member of the Executive Board.

He discussed some of the problems of interesting lay groups and in getting physicians in the surrounding areas, as well as area hospital staffs, sufficiently interested to not only participate actively but to take the time to understand the Program and its objectives.

Dr. Mattingly believes there should be a closer liaison between the Executive Board and the Planning Group, particularly the Chairman of the Advisory Group and the members of the new Policy Committee.

Following presentation of the report the Board named Dr. Clayton B. Ethridge as Chairman of the Advisory Group for 1968.

Finance Committee: The 1968 budget as presented was approved for inclusion in the notice of the Annual Business Meeting.

It was voted to defer action on a dues increase at this time and to take the matter up again next year unless some unforeseen circumstances make it necessary to review this situation at an earlier date.

A motion was made and carried to leave the \$50,000 which is presently in the Building Fund in that Fund as a cushion, or to use it to reduce the mortgage, depending upon the recommendations of the House and Building Fund Committee.

Annual Report of the Chairman of the Executive Board: A draft of this report had been mailed to all members and Dr. Corley reviewed it briefly. It was agreed that following the section of the report referring to Relative Value Studies, the Chairman and Secretary should formulate a brief statement on the concern of the Executive Board over the deteriorating relationship between the membership and Blue Cross-Blue Shield. Reference should also be made concerning "usual and customary" fees and the lack of understanding in regard to this.

Annual Report of the Secretary: A draft of this report had been previously sent to the Board members for review. There were no suggestions for change.

Scientific Assembly Progress Report: The Secretary reported briefly on the progress of plans for the SCIENTIFIC ASSEMBLY. He stated that everything was proceeding on schedule and it remained to be seen what kind of attendance would result.

Nominees for Office:

1. *Board of Group Hospitalization, Inc.* It was voted to propose Dr. Corley for a 5-year term on the Board of Group Hospitalization, to succeed Dr. Ralph D. Whitley.

2. *Board of Medical Service of D. C.* Dr. Russell M. Tilley was nominated to replace Dr. Frank S. Pellegrini and Dr. Howard A. Donald was nominated to succeed Dr. Leonard T. Peterson, each for a 3-year term on the Board of Trustees of Medical Service of D. C.

Other Business

1. **Retirement Program:** The Secretary stated that the response from the members of the Board in reference to mailing out a prospectus on the proposed Retirement Program had not been sufficiently adequate to assure that the Board was behind this proposal. There was considerable discussion, with several members of the Board pointing out that an individual could buy a retirement program under the Keogh Bill which would be just as good as the one that had been approved by the Committee on Society Insurance Programs.

It was agreed that Dr. Thomas M. Arnett, Chairman of the Society's Insurance Programs Committee, and Mr. Suter, a representative of the Prudential Life Insurance Company, be invited to attend the next Executive Board meeting.

2. **License plates for 1968:** The Secretary reported that there would be new M.D. District of Columbia license plates for 1968 and that the Society would again handle the M.D. plates for physicians. He explained that the plan is to retain these plates for a period of 3 to 5 years, but that he had asked for additional plates with an M.D. on them which would be made available to new physicians coming into the District of Columbia. Instead of the usual 1,000 M.D. license plates ordered each year, the Society now has 1,500, which will be available to members in 1968 and through '69, '70, and possibly '71 and '72.

3. **Co-sponsorship of Conference on "Cancer Registries":** The Secretary reported that Dr. John F. Potter had asked for co-sponsorship with the D. C. Cancer Society and the D. C. Health Department of a conference of individuals work-

ing with "cancer registries." It was agreed that the Society should co-sponsor such a conference, and that Dr. Potter should be so notified.

4. Dr. Ecker reported that the Red Cross had called him in reference to a program for students on the potential effects of psychedelic drugs. After some discussion it was decided that this matter should be looked into further and put on the agenda for the next meeting.

The next 2 meetings of the Board were scheduled for December 4 and December 18, the latter to be held at the home of Dr. Corley.

There being no further business, the meeting was adjourned.

MEETINGS

The William Beaumont Medical Society, an honor society of George Washington University School of Medicine, will hold its **Annual Research Day**, February 22, at the District of Columbia Medical Society Building. Beginning at 1:00 p.m., students of the School of Medicine will present, in competition, papers describing their own medical research. The guest lecturer, Dr. Vincent du Vigneaud, formerly Chairman of the Department of Biochemistry at George Washington University, will speak at 5:15 p.m. Dr. du Vigneaud won the Nobel Prize in Chemistry in 1955 for research on biochemically important sulfur compounds and for the syntheses of the posterior pituitary hormones and oxytocin. All interested persons are cordially invited to attend.

The 14th Annual Sectional Meeting for Doctors and Nurses, sponsored by the American College of Surgeons, will be held in Williamsburg, Virginia, March 11-13, 1968.

The doctors' segment of the program will include presentations in general surgery and the following specialties: gynecology-obstetrics, neurosurgery, cardiovascular surgery, otorhinolaryngology, and orthopedic surgery.

Three members of the D. C. Medical Society will address these sessions. On Monday, March 11, at 3:30 p.m., Dr. Charles A. Hufnagel, of Georgetown University, will participate in a Symposium on Surgery for Valvular Heart Disease. On Tuesday, March 12, at 2 p.m., Dr. Robert H. Barter, of George Washington University, will moderate a Panel on Genital Prolapse and Urinary Incontinence; among the panelists will be Dr. Andrew A. Marchetti, of Georgetown University.

Nurses' discussions will focus on patient communications, cryosurgery, open-heart surgery, clinical specialties, surgical techniques, and other specialized procedures. Medical films will be included in both programs.

Nurses and Fellows of the College may register at no charge. Other doctors will be assessed a registration fee of \$15.00.

Program details and official hotel reservation forms may be obtained from Mr. T. E. McGinnis, American College of Surgeons, 55 East Erie Street, Chicago, Ill. 60611.

The American Medical Association will sponsor the **Second National Congress on Socio-Economics of Health Care**, March 22-23, at the Palmer House in Chicago. The Congress will bring together authorities from medicine, health care administration, social science, education, community planning, and other disciplines to report on new developments and techniques in meeting the increased demand for health services.

There is no registration fee. A copy of the final program and a hotel reservation card for the Palmer House (the latter must be received by February 23) may be obtained by writing to the AMA, Division of Socio-Economic Activities, Department of Health Care Services, 535 North Dearborn St., Chicago, Ill. 60610.

The Eleventh Annual Joint Cardiac Symposium of the Heart Association of Northern Virginia, Inc., and the Washington Heart Association will convene on Wednesday, April 10, in the Persian Room of the Marriott Twin Bridges Motor Hotel, Washington, D. C. on U.S. Route 1.

► GENERAL NEWS

The Tenth Annual High School Heart Research Program, sponsored by the Washington Heart Association, will begin, January 27, with the first of 3 Saturday lectures in the D. C. Medical Society Exhibit Hall. These lectures, on heart and blood vessel diseases, are open to senior high school science students who will then compete in the final examination for 20 awards of \$200 each. Because enrollment is limited to the capacity of the Exhibit Hall, the Association assigns each public, private and parochial school a specific quota of students who may be accepted for the program. The \$200 stipend is awarded for 8 weeks

of summer employment on actual research projects in medical and research institutions in the Washington area.

Dr. Frank I. Marcus, of Georgetown University School of Medicine, is in charge of the 1968 Program. The 4 lecturers will be Dr. Donald Knowlan and Dr. T. James Waters, also of Georgetown, Dr. Edward W. Hawthorne, Associate Dean of Howard University School of Medicine, and Dr. Juan B. Calatayud, of George Washington University School of Medicine. Dr. Waters and Dr. Calatayud are Active members of the D. C. Medical Society.

The American Medical Association announces that it has created a **Division of Medical Education** at its headquarters with Dr. C. H. William Ruhe as head of the Division. Dr. Ruhe is also Secretary of the AMA's Council on Medical Education.

Georgetown University School of Medicine has received a grant of \$199,329 over a 3-year period from the John A. Hartford Foundation of New York for the study of the use of salt solutions in treating shock. The principal investigator is Dr. John S. Dillon, Assistant Professor of Surgery and Director of the Surgical Metabolism Research Laboratory. During the past 3 years he has studied shock therapy under a previous grant of \$96,000 from the Hartford Foundation. Co-investigator on the project is Dr. Robert J. Coffey, Chairman of the Department of Surgery.

New officers for the **Montgomery County (Maryland) Medical Society** are:

Dr. Marvin I. Mones, *President*; Dr. Merton L. White, *Vice President*; Dr. Francis C. Mayle, *Secretary*; and Dr. James A. Roberts, *Treasurer*.

Dr. Mayle is an Associate member of the D. C. Medical Society.

The Franzoni family of Washington has turned over to the Medical Society, for display in its exhibit case, the sterling silver cup which was presented to Dr. Charles William Franzoni, March 18, 1908, in recognition of 34 years as Treasurer of the Medical Society of the District of Columbia. According to the inscription, the cup was a gift to him from "some of his medical friends as evidence of their esteem and as a mark of their appreciation of his long and faithful service."

Dr. Franzoni continued as Treasurer for 45 years, from 1874 to 1919, and was named Treas-



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possible drowsiness use cautiously and warn patients who operate vehicles or machinery.

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Available: Tablets, 10 mg., 25 mg., 50 mg., 100 mg. and 200 mg.; Spansule® capsules, 30 mg., 75 mg., 150 mg., 200 mg. and 300 mg.; Injection, 25 mg./cc.; Syrup, 10 mg./5 cc.; Suppositories, 25 mg. and 100 mg.

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urer Emeritus in 1919. He was President of the Medical Association of the District of Columbia from 1891 to 1892. He died in 1923.

The Franzoni family has always felt a close bond with the Medical Society through the Gilman Drug Store, which was last owned by the late Dr. F. Royce Franzoni, an Associate member of the Medical Society. Gilman's was used by the Medical Association as a meeting place in 1865 and 1866.

The D. C. Association of Medical Assistants installed the following officers (physician-employer in parentheses) at a dinner meeting, December 13, at Blackie's House of Beef:

President: Suzanne C. Earley (Dr. Harold M. Silver)

President-elect: Helen B. Croyle (Dr. Irvin Hantman)

Vice President: Judy E. Shipe (Dr. John M. Keshishian)

Secretary: Azarine McClellan (Dr. Ralph B. Lingenman)

Treasurer: Evelyn E. Reed (Dr. Charles W. Townsend)

Dr. Ray N. Brown was elected to serve on the Advisory Committee, which includes Drs. Julius Fogel, John R. Ewan, Samuel M. Dodek, and Mr. George W. Cooley, Secretary of the Medical Society.

The D. C. Chapter is an affiliate of the American Association of Medical Assistants, with headquarters in Chicago. Monthly meetings are held alternately on the first Wednesday or Thursday at 8 p.m. in the D. C. Medical Society Building, with guest speakers from medical and allied fields.

At the National Convention of the AAMA, held in Los Angeles, October 11-15, Mrs. Margaret Swank, of Newark, Ohio, was installed as President.

Two pharmaceutical companies, Merck Sharp & Dohme and Lederle Laboratories, announced renewed support of AAMA's continuing education program by each contributing \$5,000.

Dr. Roy E. Ritts, formerly Director of the Institute for Biomedical Research of the AMA's Education and Research Foundation, joined the staff of the Mayo Clinic in Rochester, Minn., January 1, 1968, to become head of the Section of Microbiology and Professor of Microbiology at the University of Minnesota Graduate School of Medicine. Before joining the AMA in 1963 Dr. Ritts was Professor and Chairman of the Department of Microbiology at Georgetown University School of Medicine.

PERSONALS

At the Annual Meeting of the Fellows of the American College of Surgeons in Chicago, October 5, **Dr. W. Dabney Jarman** was elected to the Board of Governors for a term of 3 years.

Dr. Jarman was elected an honorary member of the National Academy of Medicine of Brazil in Rio de Janeiro, September 14, and delivered a paper at the meeting of the Academy on "Current Advances in Resident Urological Education in the United States." The Academy is limited to 100 members representing all medical specialties and awards a small number of honorary memberships to foreign physicians.

Dr. Jarman is Associate Clinical Professor of Urology at George Washington University School of Medicine, Director of Urological Training at the Washington Hospital Center, and Chairman of the Division of Urology at Children's Hospital.

Dr. John L. Parks, Dean of George Washington University School of Medicine, assumed the office of President of the Association of American Medical Colleges at its Annual Meeting at the New York Hilton in New York, October 27-30.

Dr. Oscar B. Hunter, Jr., Director of the Hunter Memorial Laboratory at Doctors Hospital, took office as President of the College of American Pathologists during its Annual Meeting at the Palmer House in Chicago, September 22-29.

Dr. Ellis April has been accepted as a member of the Founders Group of the American Board of Clinical Immunology and Allergy. Dr. April, who is Clinical Assistant Professor of Medicine at Georgetown University School of Medicine, attended the organizational meeting of the new Board in Las Vegas, Nevada, November 26-29.

Dr. Philip L. Calcagno, Professor and Chairman of the Department of Pediatrics at Georgetown University School of Medicine, has been appointed Chairman of the Committee on Residency Fellowships of the American Academy of Pediatrics.

Dr. James W. Long, an Associate member of the D. C. Medical Society, has joined the staff of the National Library of Medicine where he will be in charge of terminology development and management in the Toxicology Information Pro-

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gram. Dr. Long was formerly associated with the Food and Drug Administration as a member of the Adverse Reactions Task Force.

► CORRESPONDENCE

CHICAGO, ILL., November 10, 1967

TO JACK KLEH, M.D., CHAIRMAN,

COMMITTEE ON PUBLIC WELFARE:

May I express for myself and the Committee on Aging our appreciation for your participation and assistance in the Conference on Aging and Long-term Care in Baltimore, Maryland.

The success of the Baltimore Conference was due in large measure to you and the other participants who gave so freely of their time and talents.

Our sincere thanks for your help.

FREDERICK C. SWARTZ, M.D.
*Chairman, Committee on Aging,
American Medical Association*

TO PRESIDENT ECKER:

I was very appreciative of the honor that the Medical Society paid to Mrs. Hyman as it reflects great credit on the Washington Hospital Center.

I also congratulate you on your term as President particularly in the one hundred and fiftieth year of the Society's efforts.

GILBERT HAHN, JR.
*President, Board of Trustees,
Washington Hospital Center*

► OBITUARIES

William Herndon Jenkins, M.D.

(1890-1967)

DR. WILLIAM H. JENKINS, a Life member of the Medical Society of the District of Columbia, died at the home of his son in Federal Way, Washington, November 20, 1967.

A Virginian, Dr. Jenkins was born in Leesburg, December 29, 1890, to William S. and Ora Lee Daniel Jenkins. He attended Richmond College and graduated in medicine from the University of Maryland School of Medicine in 1915. He interned for a year at the University of Maryland Hospital in Baltimore, and after serving in World War I he was resident physician at the New York Eye and Ear Hospital from 1919 to 1920. He went abroad, to Vienna, for further study in his field in 1931.

In 1917, prior to U. S. involvement in World War I, he enlisted in the U. S. Army Medical Corps and served on loan to the British Army with the 55th Division, BEF; he was captured in April 1918 and held as a German prisoner of war for 8 months.

Dr. Jenkins came to the District of Columbia in 1920. He was associated with the late Dr. William B. Mason for 20 years before he opened his own office for practice at 2024 R Street, N.W. He was on the staff of the Episcopal Eye, Ear and Throat Hospital from 1920 until it merged into the Washington Hospital Center. He was a member of the consulting staff to the Center, the Clinical Center of the National Institutes of Health, the National Naval Medical Center, the Walter Reed Army Medical Center, and the New York Eye and Ear Infirmary.

He joined the faculty of George Washington University School of Medicine in 1935, first as Associate Professor of Otolaryngology, and as Professor from 1954 until 1957, when he was accorded Emeritus status.

Dr. Jenkins was a diplomate of the American Board of Otolaryngology, a Fellow of the American College of Surgeons, a member of the American Medical Association, an Active member of the Medical Society of D. C. from 1922 and a Life member since 1962, a member of the Southern Medical Association, the American Laryngological, Rhinological and Otolological Society, the Washington Academy of Medicine, and a member and Past President of the International Medical Club and the Clinico-Pathological Society. He also belonged to the Chevy Chase Club.

Surviving him are his wife, Mrs. Gene M. Jenkins, and his son, William M., both of Federal Way, Washington, and a sister, Mrs. John Clemons, of Leesburg, Va.

Charles Samuel Wise, B.S., M.D.

(1916-1967)

DR. CHARLES S. WISE, Professor of Physical Medicine and Rehabilitation at George Washington University School of Medicine, died, November 23, 1967, at the University Hospital after a short illness.

Dr. Wise was born in New York City, April 30, 1916, to Nathan and Pearl Wise. He received his Bachelor's degree in Science from New York University in 1936 and his degree in medicine from the New York University College of Medicine in 1939. He interned at Bellevue Hospital in New

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During World War II he served for 3 years in the Medical Corps of the United States Army as an officer in the Air Transport Command as Liaison Medical Officer in the China-Burma-India theatre of operations.

His interest turning to physical medicine, Dr. Wise studied as one of the first Baruch Fellows in Physical Medicine at Harvard Medical School from 1945 to 1948. The latter year he joined the faculty of George Washington University as Associate Professor of Physical Medicine and Director of the Department of Physical Medicine at the University Hospital. He was later promoted to Professor and Chairman of the Department of Physical Medicine and Rehabilitation in the School of Medicine.

Dr. Wise was Consultant in Physical Medicine and Rehabilitation to Walter Reed General Hospital, the Clinical Center of the National Institutes of Health, St. Elizabeths Hospital, and Children's Hospital, and he served as medical consultant to the United Mine Workers and to many other organizations.

He was a diplomate of the American Board of Physical Medicine and Rehabilitation and a member of the American Medical Association, an Active member of the Medical Society of the District of Columbia since 1949, and a member of the American Congress of Physical Medicine and Rehabilitation, American Academy of Physical Medicine and Rehabilitation, American Academy of Neurology, American Rheumatism Association, the Jacobi Medical Society, and the Metropolitan Washington Society of Physical Medicine and

Rehabilitation. He was also a member of the Cosmos Club and Alpha Omega Alpha Fraternity. He had contributed many articles to the literature on the subject of physical medicine.

Dr. Wise is survived by his wife, Mrs. Irene Bernstein Wise, of the home at 3528 Davenport Street, N.W.; 2 sons, Robert, a medical student at Duke University, and Thomas, a medical student at Dartmouth College; and a daughter, Joan, a student at Brandeis University.

Malaria Treatment—Blohm

(Continued from page 22)

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AMA Archive-Library

(Continued from page 46)

meetings outside the United States. After a doctor is situated abroad, the Library will continue to provide research facilities and photocopy services on specific medical subjects just as they do to physicians stateside.

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Copies of a "Guide to Services of the Archive-Library Department," a 16-page pamphlet, will soon be available through the AMA for further information on this AMA service.

The full 1/4 grain of phenobarb in the formula
takes the nervous edge off the pain
...helps bring out the best in codeine

A close-up portrait of a woman with dark, wavy hair. She is wearing a white, circular eye patch over her right eye. She is holding a lit cigarette in her mouth, with her hand visible near her chin. The background is a plain, light color. The overall tone is somber and clinical.

A. H. ROBINS CO., INC., Richmond, Va. 23220

When the agitated businessman goes to work...

He goes home at night and takes it out on his family.

He loses his temper with colleagues and subordinates.

Emotionally upset, he misses half of what is said at meetings.

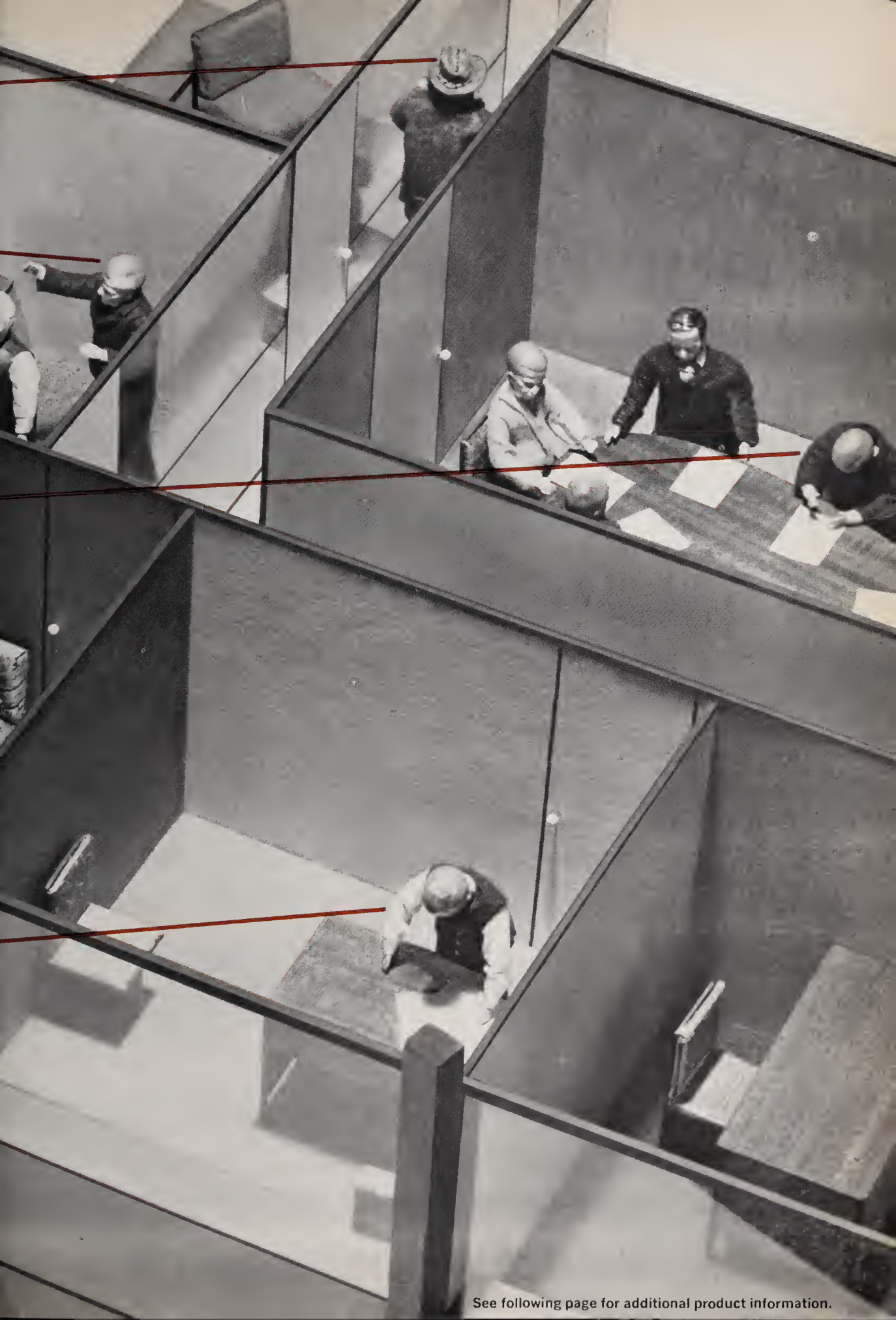
He is always fearful about his standing with the boss.

He just can't seem to settle down to his work.

for moderate to severe anxiety

Mellaril[®]
(thioridazine)
25 mg. t.i.d.





See following page for additional product information.

When the agitated businessman goes to work...

Anxiety that *seriously interferes* with the individual's performance at work, at home, or in the community may be regarded as *moderate to severe* in degree.

Mellaril often recommends itself to the treatment of moderate to severe anxiety because it

- helps control the most frequent symptoms: marked tension, agitation, apprehension, restlessness, hypermotility
- often alleviates anxiety-induced somatic complaints
- frequently helps strengthen emotional resources
- helps the patient maintain realistic contact with environment, closer harmony with family

Thus, when you consider the anxiety moderate to severe... consider Mellaril.

Contraindications: Severely depressed or comatose states from any cause, and in association with or following MAO inhibitors; severe hypertensive or hypotensive heart disease.

Precautions: Hypersensitivity reactions (e.g., leukopenia, agranulocytosis) and convulsive seizures are infrequent. Pigmentary retinopathy has been observed where doses in excess of those recommended were used for long periods of time. May potentiate central nervous system depressants, atropine, and phosphorus insecticides. Where complete mental alertness is required, administer the drug cautiously and increase dosage gradually. In addition, orthostatic hypotension (especially in female patients) has been observed. Epinephrine should be avoided in treatment of drug-induced hypotension.

Side Effects: Pseudoparkinsonism and other extrapyramidal disorders are infrequent; drowsiness, especially in high doses early in treatment, may occur; nocturnal confusion, dryness of the mouth, nasal stuffiness, headache, peripheral edema, lactation, galactorrhea, and inhibition of ejaculation are noted on occasion; photosensitivity and other allergic skin reactions may occur but are extremely rare.

Before prescribing, see package insert for full product information.

for moderate to severe anxiety
Mellaril[®]
(thioridazine)
25 mg. t.i.d.



mudrane[®]

for

- EMPHYSEMA
- ASTHMA
- CHRONIC BRONCHITIS
- BRONCHIECTASIS

*The
fast-disintegrating
uncoated tablet
gives relief in
15 minutes*

Each tablet contains:

Potassium Iodide	195 mg.
Aminophylline	130 mg.
Phenobarbital, Caution: May be habit forming	21 mg.
Ephedrine HCl	16 mg.

FEDERAL LAW PROHIBITS

DISPENSING WITHOUT PRESCRIPTION

Precautions: Usual for aminophylline-ephedrine-phenobarbital. Iodides may cause nausea, long use may cause goiter. Discontinue if symptoms of iodism develop.

Iodide contraindications: tuberculosis, pregnancy.

DOSAGE

One tablet, with full glass of water, 3 or 4 times daily.

Dispensed in bottles of 100 and 1000 tablets.

MUDRANE GG—Formula, dosage and package identical to Mudrane—*except*—100 mg. glyceryl guaiacolate replaces the potassium iodide. The value of Mudrane cannot be enjoyed by a small group in which K.I. is contraindicated. Mudrane GG is prepared for this group.

MUDRANE GG ELIXIR—Four 5 cc teaspoonfuls is equivalent to one Mudrane GG tablet. Dosage adjusted to age and weight of child. Mudrane GG Elixir is for pediatric patients and those who think they cannot swallow tablets. Dispensed in pint and half gallon bottles.

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RICHMOND, VIRGINIA 23217

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Togetheress....

...can be rough when epidemics of nausea and vomiting strike a family. Emetrol offers prompt, safe relief. It is free from toxicity¹ or side effects^{2,3} and will not mask symptoms of serious organic disorders.

1. Bradley, J. E., *et al.*: J. Pediat. 38:41 (Jan.) 1951.
2. Bradley, J. E.: Mod. Med. 20:71 (Oct. 15) 1952.
3. Crunden, A. B., Jr., and Davis, W. A.: Am. J. Obst. & Gynec. 65:311 (Feb.) 1953.



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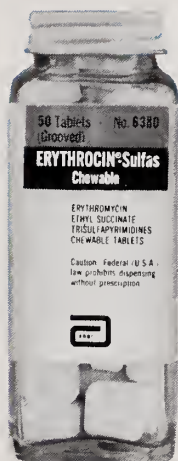
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for over 100 cars with an attendant on duty



Perhaps there have been times when you wanted to prescribe erythromycin and triple sulfas for little patients. Now you can—with a choice of two new fine-tasting pediatric forms.

New—Two Pediatric Forms of Erythromycin and Triple Sulfas



ERYTHROCIN®-SULFAS Chewable (Erythromycin ethyl succinate-trisulfapyrimidines chewable tablet)

In clinical trials^{1,2}, this orange-flavored tablet was given to 55 patients, aged four months to 18 years.

Diagnoses (multiple in some cases) represented a cross section of bacterial infections commonly seen in pediatric office practice.

Therapy was given from three to 12 days, with an average of six days.

Of the 55 patients, 30 were reported cured within 72 hours, while 22 showed partial recovery within the same time, and subsequent clinical cure.

A clinical cure rate of 94.5%

ERYTHROCIN®-SULFAS Granules (Erythromycin ethyl succinate-trisulfapyrimidines granules for oral suspension)

87 patients were treated^{1,2}—all children, ages four months to 15 years.

The diagnoses were multiple in some cases and were chiefly bacterial infections of the respiratory tract.

Dosage was maintained from three to 10 days; average treatment was five days. All of the ill children accepted the orange-flavored suspension favorably.

53 were clinically cured within 72 hours, while 32 showed partial relief within the same time, and subsequent clinical cure.

701358

A clinical cure rate of 97.7%

1. Case Reports on File, Dept. Clin. Development, Abbott Laboratories.
2. Polley, R.F.L., Use of Erythromycin-Sulfas in Office Practice, Western Med., 7:177, July, 1966.



Brief
Summary
on next
page

ERYTHROCIN®-SULFAS

Brief Summary

Contraindications: Known sensitivity to erythromycin or sulfonamides. Because of the possibility of kernicterus with sulfonamides, do not use in pregnancy at term, premature or newborn infants.

Warnings: As with other forms of sulfonamide therapy, carefully evaluate patients with liver or kidney damage, urinary obstruction, or blood dyscrasia. Deaths have been reported from hypersensitivity reactions and blood dyscrasias following use of sulfonamides. Perform blood counts and liver and kidney function tests if used repeatedly at close intervals or for long periods.

Precautions, Side Effects: Occasionally mild abdominal discomfort, nausea or vomiting may occur with erythromycin, generally controlled by reduction of dosage. Mild allergic reactions (such as urticaria and other skin rashes) may occur. Serious allergic reactions have been extremely infrequent. Use sulfonamides with caution in patients with a history of allergy. Assure adequate fluid intake to prevent crystalluria and institute alkali therapy if indicated. If overgrowth of nonsusceptible organisms occurs, withdraw the drug and institute appropriate treatment. If a patient should show signs of hypersensitivity, appropriate countermeasures (e.g. epinephrine, steroids, etc.) should be administered and the drug withdrawn.

Adverse Reactions: Sulfonamide therapy may be associated with headache, nausea, vomiting, urticaria, diarrhea, hepatitis, pancreatitis, blood dyscrasias, neuropathy, drug fever, skin rash, injection of the conjunctiva and sclera, petechiae, purpura, hematuria and crystalluria.

Side effects due to erythromycin are infrequent, but occasional abdominal discomfort, nausea, or vomiting, urticaria and other skin rashes may occur.

Supplied: The Granules for Oral Suspension come in bottles of 60 ml. and 150 ml. The Chewable tablets are in bottles of 50. Each 5-ml. teaspoonful of reconstituted Granules or each Chewable tablet provides erythromycin ethyl succinate equivalent to 125 mg. of erythromycin activity and 167 mg. of each of sulfadiazine, sulfamerazine and sulfamethazine.

701358



► NATIONAL & REGIONAL MEETINGS

February 6-10: American College of Radiology. Drake Hotel, Chicago. Address: Mr. William C. Stronah, Executive Director, 20 North Wacker Drive, Chicago, Ill. 60606.

February 7-9: American Academy of Occupational Medicine. Marriott Twin Bridges Motel, Washington. Address: Dr. Bertram D. Dinman, Executive Secretary, Institute of Industrial Health, University of Michigan Medical Center, Ann Arbor, Mich. 48104.

February 11-12: 64th Annual Congress on Medical Education. Palmer House, Chicago. Address: Dr. C. H. William Ruhe, AMA Council on Medical Education, 535 North Dearborn Street, Chicago, Ill. 60610.

March 3-7: International Academy of Pathology. Drake Hotel, Chicago. Address: Dr. F. K. Mostofi, Secretary-Treasurer, IAP, c/o Armed Forces Institute of Pathology, Washington, D. C. 20305.

March 11-13: American College of Surgeons (Sectional Meeting for Doctors and Nurses). Williamsburg Inn, Williamsburg, Va. Address: Communications Department, 55 East Erie Street, Chicago, Ill. 60611.

March 13-15: International Symposium on Radiation Therapy. New York. Address: Dr. Ralph Phillips, Memorial Sloan-Kettering Cancer Center, 444 East 68th Street, New York, N. Y. 10021.

March 15-16: 14th Annual Conference of State Mental Health Representatives—"Drug Abuse in the Now Generation." Drake Hotel, Chicago. Address: Walter Wolman, Ph.D., Director, Department of Mental Health, 535 North Dearborn Street, Chicago, Ill. 60610.

March 18-20: American Academy of Pediatrics. Regency Hyatt House, Atlanta, Ga. Address: Dr. Robert G. Frazier, Executive Director, 1801 Hinman Avenue, Evanston, Ill. 60204.

March 20: National Conference on Suicidology. Conrad-Hilton Hotel, Chicago. Address: Edwin S. Shneidman, Ph.D., Chief, Center for Studies of Suicide Prevention, National Institute of Mental Health, 5454 Wisconsin Avenue, Chevy Chase, Md. 20203.

March 22-23: Second National Congress on the Socio-Economics of Health Care. Palmer House, Chicago. Address: Council on Medical Service, American Medical Association, 535 North Dearborn Street, Chicago, Ill. 60610.

March 25-28: Southeastern Surgical Congress. Sheraton-Park Hotel, Washington. Address: Dr. A. H. Letton, Executive Secretary, 840 Boulevard, N.E., Atlanta, Ga. 30312.

March 29-31: American Society of Internal Medicine. Hotel Statler, Boston. Address: Mr. Edward E. Daleske, Assistant Executive Director, 3410 Geary Blvd., San Francisco, Calif. 94118.

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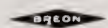
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For Iron Deficiency Anemia



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FAMOUS
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brand of FERROUS GLUCONATE

**in moderate hypertension and
poorly controlled mild hypertension**
(when diuretics or sedatives are inadequate, for example)



When your patients expect a lot...

like relief from hypertensive symptoms

(headache, fatigue, nervousness, palpitation or insomnia, for example)

like an up-to-date, once-a-day dosage schedule

(a schedule not unlike timed-release medication, for example)

like a daily dose of medication for peanuts

(at 10¢ a tablet, for example)

like generally well-tolerated therapy

(as described in the package insert, for example)

...give them a little
(one tablet daily)

Regroton®

chlorthalidone 50 mg., reserpine 0.25 mg.

Indications: Hypertension. **Contraindications:** History of mental depression, hypersensitivity, and most cases of severe renal or hepatic diseases. **Warning:** With the administration of enteric-coated potassium supplements, which should be used only when adequate dietary supplementation is not practical, the possibility of small-bowel lesions (obstruction, hemorrhage, and perforation) should be kept in mind. Surgery for these lesions has frequently been required and deaths have occurred. Discontinue coated potassium-containing formulations immediately if abdominal pain, distention, nausea, vomiting, or gastrointestinal bleeding occur. Discontinue one week before electroshock therapy, and if depression or peptic ulcer occurs. *Use in pregnancy:*

Regroton should be used in pregnant patients or in women of childbearing potential only when, in the judgment of a physician, its use is deemed essential to the welfare of the patients; adverse reactions (thrombocytopenia, hyperbilirubinemia, altered carbohydrate metabolism, etc.) are potential problems in the newborn.

Precautions: Antihypertensive therapy with Regroton should always be initiated cautiously in postsympathectomy patients and in patients receiving ganglionic blocking agents, other potent antihypertensive drugs, or curare. Reduce dosage of concomitant antihypertensive agents by at least one-half. To avoid hypotension during surgery, discontinue Regroton therapy two weeks prior to elective surgical procedures. In emergency surgery, use, if needed, anticholinergic or adrenergic drugs or other supportive measures as indicated. Because of the possibility of progression of renal damage, periodic kidney function tests are indicated. Discontinue if the BUN rises or liver dysfunction is aggravated. Hepatic coma may be precipitated. Electrolyte imbalance, sodium and/or potassium depletion may occur. If potassium depletion should occur during therapy, Regroton should be discontinued and potassium supplements given, provided the

patient does not have marked oliguria. Take particular care in cirrhosis or severe ischemic heart disease and in patients receiving corticosteroids, ACTH, or digitalis. Salt restriction is not recommended. Use cautiously in patients with ulcerative colitis or gallstones (biliary colic may be precipitated). Bronchial asthma may occur in susceptible patients. **Adverse Reactions:** The drug is generally well tolerated. The most frequent side effects are nausea, gastric irritation, vomiting, diarrhea, constipation, muscle cramps, headache, dizziness and acute gout. Other potential side effects include angina pectoris, anxiety, depression, bradycardia and ectopic cardiac rhythms (especially when used with digitalis), drowsiness, dull sensorium, hyperglycemia and glycosuria, hyperuricemia, lassitude, restlessness, transient myopia, impotence or dysuria, orthostatic hypotension which may be potentiated when chlorthalidone is combined with alcohol, barbiturates or narcotics, leukopenia, aplastic anemia, skin rashes, thrombocytopenia, agranulocytosis, nasal stuffiness, increased gastric secretions, nightmare, purpura, urticaria, ecchymosis, weakness, uveitis, optic atrophy and glaucoma, and pruritus. Eruptions and/or flushing of the skin, a reversible paralysis agitans-like syndrome, blurred vision, conjunctival injection, increased susceptibility to colds, dyspnea, weight gain, decreased libido, dryness of the mouth, deafness, anorexia, and pancreatitis when epigastric pain or unexplained G.I. symptoms develop after prolonged administration. Jaundice, xanthopsia, paresthesia, photosensitization and necrotizing angitis are possible. **Average Dosage:** One tablet daily with breakfast. **Availability:** Pink, single-scored tablets in bottles of 100 and 1000. (B) 46-600-B
For details, see complete Prescribing Information.



Geigy Pharmaceuticals, Division of
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Geigy



WHAT DOES GALVANIC SKIN RESISTANCE DEMONSTRATE ABOUT THE EFFECT OF VALIUM (diazepam)?

Galvanic skin resistance...one measure of the Valium (diazepam) effect
in reducing the somatic response to acute stress^{1,2}

The subjective value of Valium (diazepam) has been proved by many clinical and empirical evaluations. Now, also objective criteria such as used in other areas of scientific research have demonstrated the effectiveness of Valium (diazepam) in reducing certain somatic responses to acute stress.

Devised as a research tool in psychosomatic medicine, this interesting method records respiratory excursions, galvanic skin resistance, cardiac activity and finger pulse volume as physical

responses to stress. These autonomic nervous system responses to a standardized stressor—a film dealing with life-threatening incidents—are continuously monitored on the polygraph.

This gives a graphic representation of changes which the body may undergo in reacting to stress. The application of modern statistical analysis to these graphs provides a yardstick by which the calming effect of Valium (diazepam) can be measured quantitatively.

Before prescribing, please consult complete product information, a summary of which follows:

Contraindications: Infants, patients with a history of convulsive disorders, glaucoma or known hypersensitivity to drug.

Warning: Not of value in the treatment of psychotic patients, and should not be employed in lieu of appropriate treatment.

Precautions: Limit dosage to smallest effective amount in elderly or debilitated patients (not more than 1 mg, one or two times daily initially) to preclude ataxia or oversedation, increasing gradually as needed or tolerated. As is true of all CNS-acting drugs, until correct maintenance dosage is established, advise patients against possibly hazardous procedures requiring complete mental alertness or physical coordination. Driving during therapy not recommended. In general, concurrent use with other psychotropic agents is not recommended. If such combination therapy is used, carefully consider individual pharmacologic effects—particularly with known compounds which may potentiate action of Valium (diazepam), such as phenothiazines, barbiturates, MAO inhibitors and other antidepressants. Advise patients against simultaneous ingestion of alcohol or other CNS depressants. Safe use in pregnancy not established. Employ usual precautions in treatment of anxiety states with evidence of impending depression; suicidal tendencies may be present and protective measures necessary. Observe usual precautions in impaired renal or hepatic function. Periodic blood counts and liver function tests advisable in long-term use. Cease therapy gradually.

Side Effects: Side effects (usually dose-related) are fatigue, drowsiness and ataxia. Also reported: mild nausea, dizziness, blurred vision, diplopia, headache, incontinence, slurred speech, tremor and skin rash; paradoxical reactions (excite-

ment, depression, stimulation, sleep disturbances, acute hyperexcited states, hallucinations); changes in EEG patterns during and after drug treatment. Abrupt cessation after prolonged overdosage may produce withdrawal symptoms (convulsions, tremor, abdominal and muscle cramps, vomiting, sweating) similar to those seen with barbiturates, meprobamate and chlor-diazepoxide HCl.

Dosage—Adults: Mild to moderate psychoneurotic reactions, 2 to 5 mg b.i.d. or t.i.d.; severe psychoneurotic reactions, 5 to 10 mg t.i.d. or q.i.d.; alcoholism, 10 mg t.i.d. or q.i.d. in first 24 hours, then 5 mg t.i.d. or q.i.d. as needed; muscle spasm with cerebral palsy or athetosis, 2 to 10 mg t.i.d. or q.i.d. *Geriatric patients:* 1 or 2 mg/day initially, increase gradually as needed and tolerated. (See *Precautions*.)

Supplied: Valium® (diazepam) Tablets, 2 mg, 5 mg and 10 mg; bottles of 50 and 500.

Roche Laboratories, Division of Hoffmann-La Roche Inc.
Nutley, N.J. 07110

References: 1. Selesnick, S. T., and Clemens, T. L.: From research film "Motion Picture Films in Psychosomatic Research," available from Roche Laboratories. 2. Clemens, T. L., and Selesnick, S. T.: *Dis. Nerv. System*, 28:98, 1967.

VALIUM® 
(diazepam) Roche®
useful for somatic symptoms
of psychic tension



when he just can't sleep
Tuinal[®]

**One-Half Sodium Amobarbital and
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supplied in $\frac{3}{4}$, 1½, and 3-grain Pulvules[®]**



Tuinal helps wakeful patients fall asleep fast, stay asleep all night.

Indications: Tuinal is indicated for prompt and moderately long-acting hypnosis. It is not suitable for continuous daytime sedation.

Contraindications: Barbiturates should not be administered to anyone with a history of porphyria, nor should they be given in the presence of uncontrolled pain, because excitement may result.

Warning: May be habit-forming.

Precautions: Tuinal should be used cautiously in patients with decreased liver function, since prolongation of effect may occur.

Adverse Reactions: Idiosyncrasy, such as excitement, hangover, or pain, may appear. Hypersensitivity reac-

tions occur in some patients, especially in those with asthma, urticaria, or angioneurotic edema.

Overdosage: C.N.S. depression. **Symptoms**—Depression of respiration and of superficial and deep reflexes, slight constriction of the pupils (in severe poisoning, dilation), decreased urine formation, lowered body temperature, coma. **Treatment**—Symptomatic and supportive (gastric lavage; intravenous fluids; maintenance of blood pressure, body temperature, and adequate respiration). Dialysis may speed removal of barbiturates from body fluids.



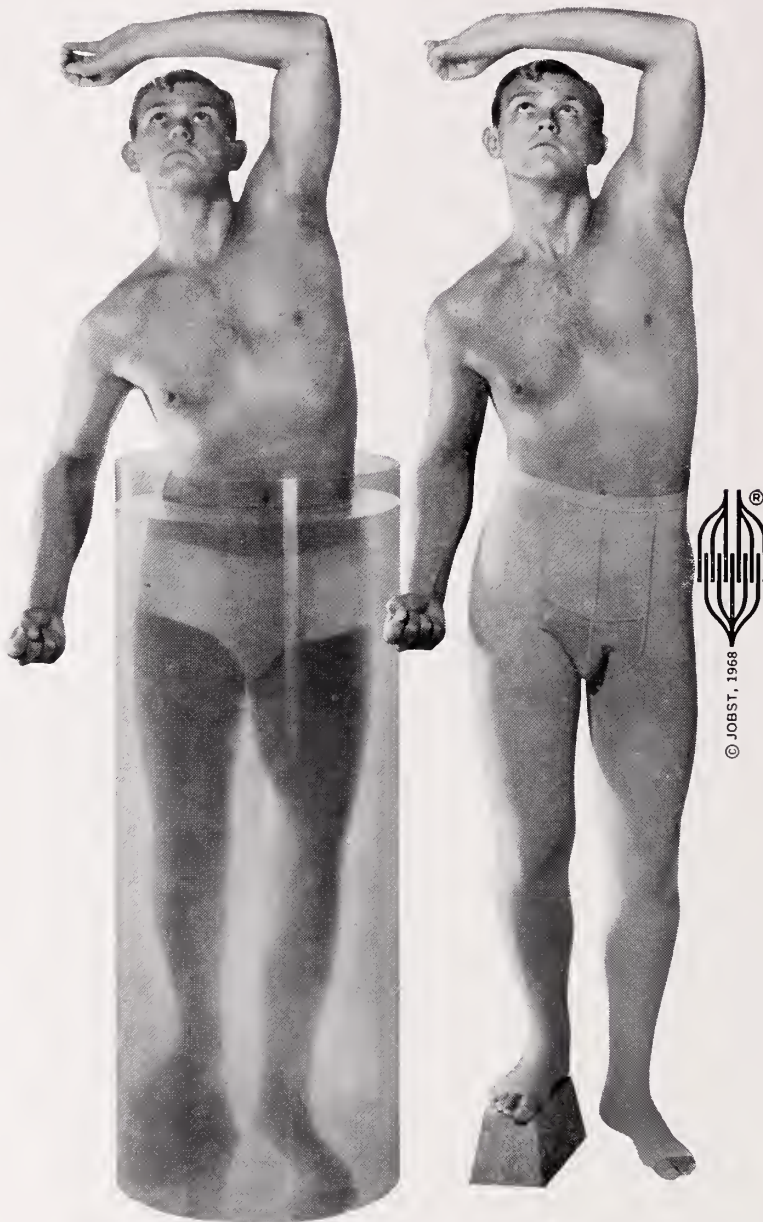
Dosage: 50-200 mg. ($\frac{3}{4}$ -3 grains) at bedtime.

[031767]

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In winter "flu" and viral gastroenteritis, Donnagel (4 oz. size!) can bring aid and comfort to sufferers from both diarrhea and its discomforts because it contains kaolin and pectin plus belladonna alkaloids (as in Donnatal®). Donnagel treats the whole diarrhea problem. Available on your prescription or recommendation.

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 Each 5 cc. contains:
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Non-narcotic for 6-8 hour cough control
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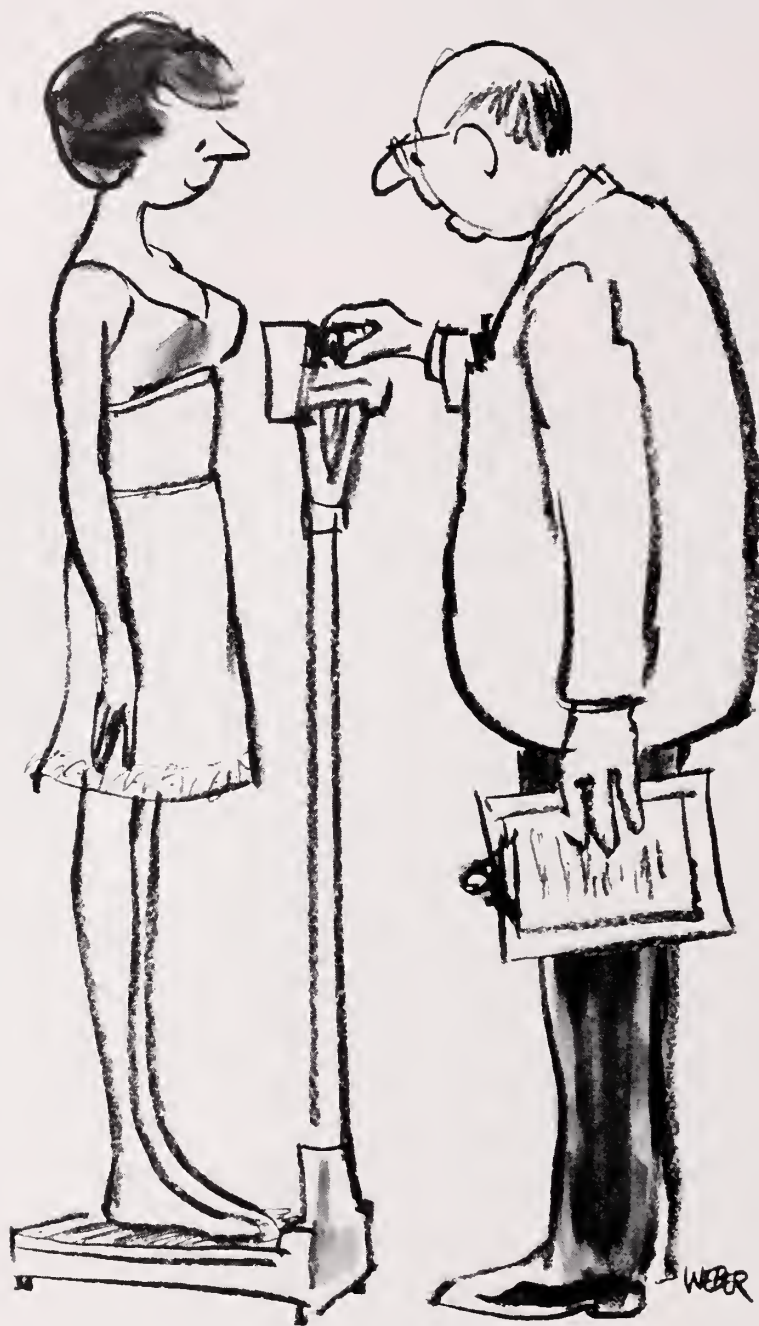
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DEMULCENT	●	●	●	●
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ANTIHISTAMINE		●		
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When a new dietary pattern must be established, consider the adjunctive use of **BAMADEX SEQUELS**. Combining the proven *anorexigenic* action of d-amphetamine with the *tranquilizing* effect of meprobamate, BAMADEX SEQUELS controls appetite throughout the day, usually with a single capsule daily.

Contraindications: Dextro-amphetamine sulfate: In hyperexcitability and in agitated prepsychotic states. Previous allergic or idiosyncratic reactions to meprobamate.

Precautions: Use with caution in patients hypersensitive to sympathomimetic compounds, who have coronary or cardiovascular disease, or are severely hypertensive.

Dextro-amphetamine sulfate: Excessive use by unstable individuals may result in psychological dependence.

Meprobamate: Careful supervision of dose and amounts prescribed is advised, especially for patients with known propensity for taking excessive quantities of drugs. Excessive and prolonged use in susceptible persons, e.g. alcoholics, former addicts, and other severe psychoneurotics, has been reported to result in dependence on the drug. Where excessive dosage has continued for weeks or months, reduce dosage gradually. Sudden withdrawal may precipitate recurrence of preexisting symptoms such as anxiety, anorexia, or insomnia; or withdrawal reactions such as vomiting, ataxia, tremors, muscle twitching and, rarely, epileptiform seizures. Should meprobamate cause drowsiness or visual disturbances, reduce dosage and avoid operation of motor vehicles, machinery or other activity requiring alertness. Effects of excessive alcohol consumption may be increased by meprobamate. Appropriate caution is recommended with patients prone to both petit and grand mal epilepsy meprobamate may precipitate grand mal attacks. Prescribe cautiously and in small quantities to patients

with suicidal tendencies.

Side Effects: Overstimulation of the central nervous system, jitteriness and insomnia or drowsiness. Dextro-amphetamine sulfate: Insomnia, excitability, and increased motor activity are common and ordinarily mild side effects. Confusion, anxiety, aggressiveness, increased libido, and hallucinations have also been observed, especially in mentally ill patients. Rebound fatigue and depression may follow central stimulation. Other effects may include dry mouth, anorexia, nausea, vomiting, diarrhea, and increased cardiovascular reactivity.

Meprobamate: Drowsiness may occur and can be associated with ataxia; the symptom can usually be controlled by decreasing the dose, or by concomitant administration of central stimulants. Allergic or idiosyncratic reactions: maculopapular rash, acute nonthrombocytopenic purpura with petechiae, ecchymoses, peripheral edema and fever, transient leukopenia. A case of fatal bullous dermatitis, following administration of meprobamate and prednisolone, has been reported. Hypersensitivity has produced fever, fainting spells, angioneurotic edema, bronchial spasms, hypotensive crises (1 fatal case), anuria, stomatitis, proctitis (1 case), anaphylaxis, agranulocytosis and thrombocytopenic purpura, and a fatal instance of aplastic anemia, but only when other drugs known to elicit these conditions were given concomitantly. Fast EEG activity, usually after excessive dosage. Impairment of visual accommodation. Massive overdosage may produce drowsiness, lethargy, stupor, ataxia, coma, shock, vasomotor and respiratory collapse.

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Dextro-amphetamine sulfate (15 mg.)
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Sustained Release Capsules



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References: 1. Hoon, J. R.: Arch. Surg. 93:467 (Sept.) 1966.
2. Danhof, I. E., Personal communication.

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References: 1. Isenberg, H. D.: Clinical Evaluation of Laboratory Guidance to Antibiotic Therapy; Health Laboratory Science (July) 1967. 2. Saslaw, S., Carlisle, H. N.: Studies on Therapy of Staphylococcal Infections in Monkeys. 1. Comparison of Cloxacillin, Triacetyloleandomycin and Erythromycin. Proc. Soc. Exp. Biol. & Med.: Vol. 125, No. 4 (Aug.-Sept.) 1967.



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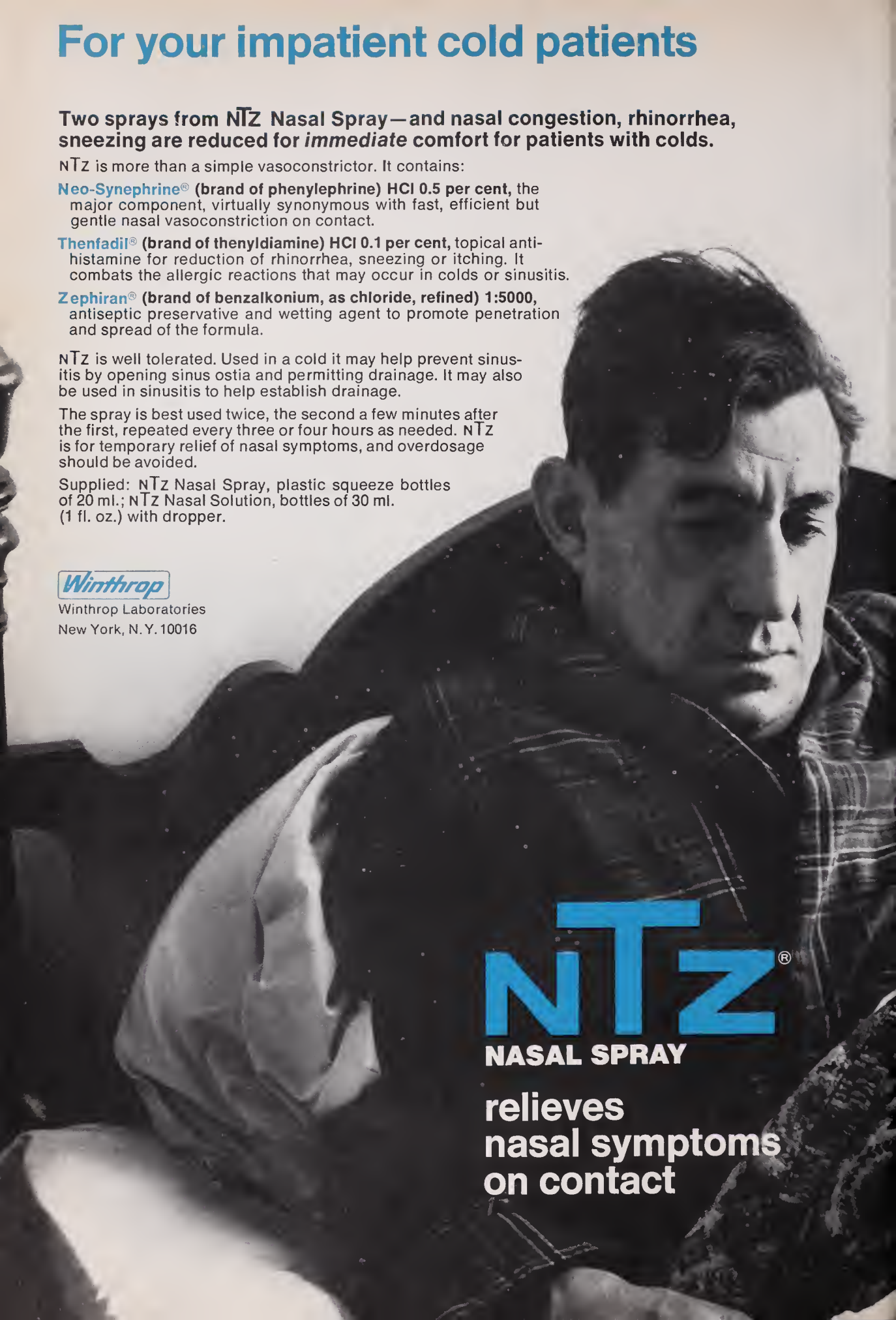
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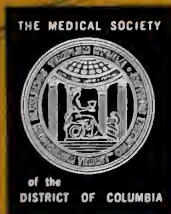
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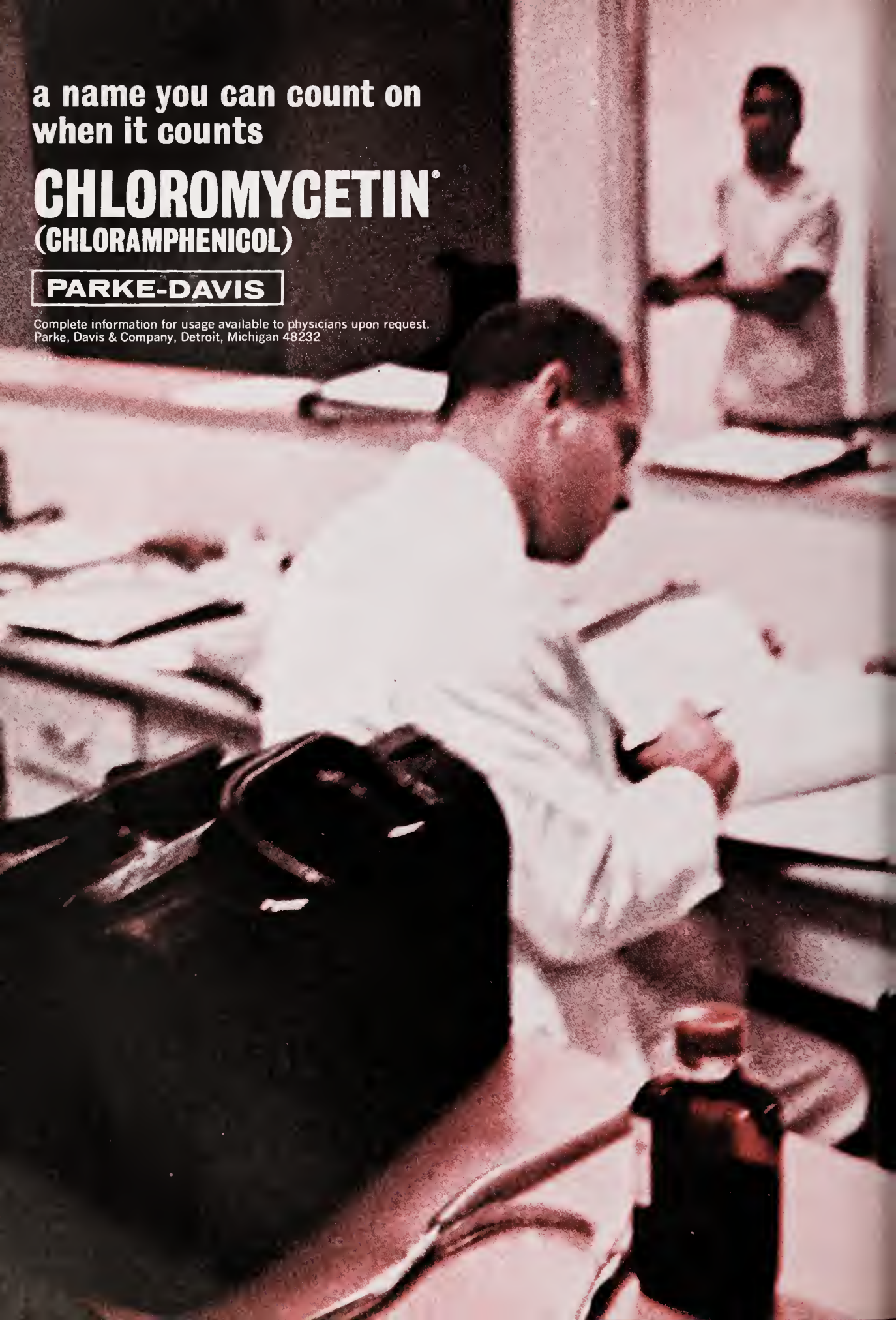
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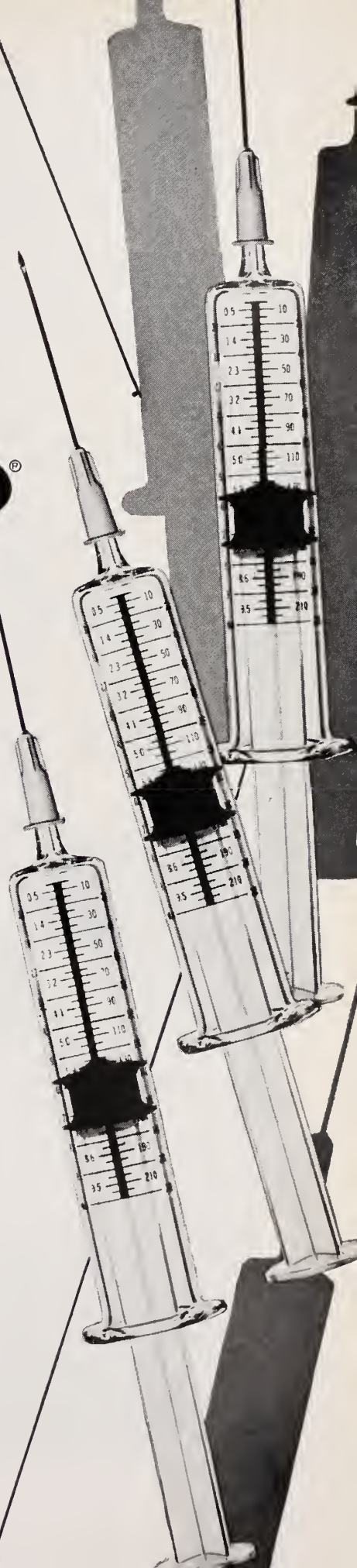
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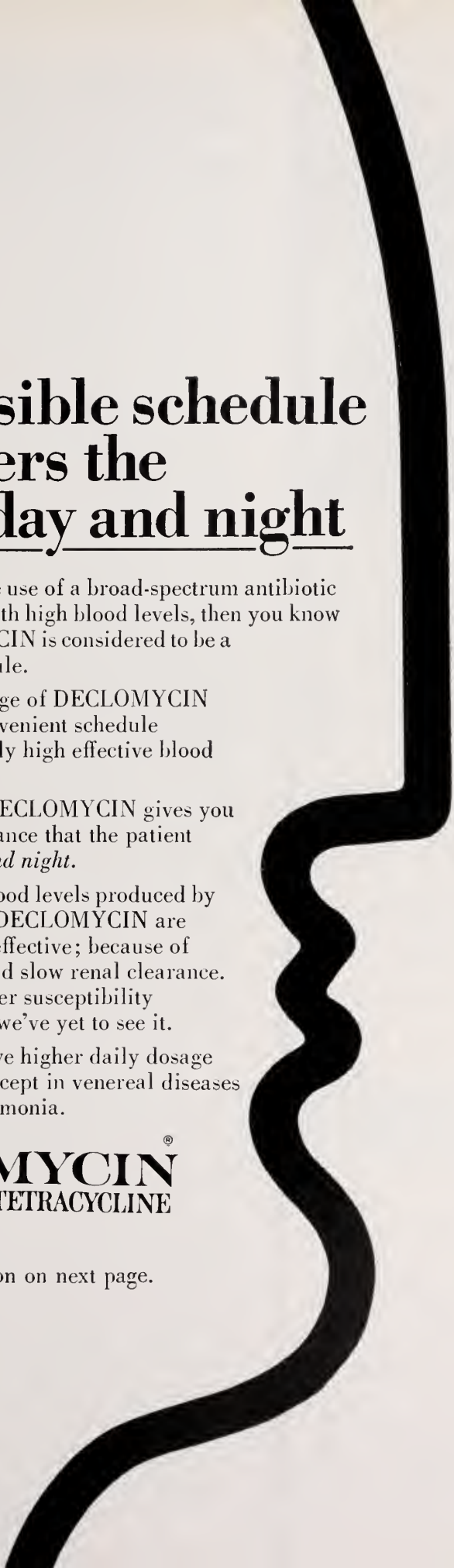
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b.i.d. The sensible schedule that covers the patient day and night

DECLOMYCIN Demethylchlortetracycline should be equally or more effective therapeutically than other tetracyclines when the offending organisms are tetracycline-sensitive.

Contraindication: History of hypersensitivity to demethylchlortetracycline.

Warning—In renal impairment, usual doses may lead to excessive accumulation and liver toxicity. Under such conditions, lower than usual doses are indicated, and, if therapy is prolonged, serum level determinations may be advisable. A photodynamic reaction to natural or artificial sunlight has been observed. Small amounts of drug and short exposure may produce an exaggerated sunburn reaction which may range from erythema to severe skin manifestations. In a smaller proportion, photoallergic reactions have been reported. Patients should avoid direct exposure to sunlight and discontinue drug at the first evidence of skin discomfort. Necessary subsequent courses of treatment with tetracyclines should be carefully observed.

Precautions—Overgrowth of nonsusceptible organisms may occur. Constant observation is essential. If new infections appear, appropriate measures should be taken. In infants, increased intracranial pressure with bulging fontanels has been observed. All signs and symptoms have disappeared rapidly upon cessation of treatment.

Side Effects—Gastrointestinal system—*anorexia, nausea, vomiting, diarrhea, stomatitis, glossitis, enterocolitis, pruritus ani.* Skin—*maculopapular and erythematous rashes.* A rare case of exfoliative dermatitis has been reported. Photosensitivity: *onycholysis and discoloration of the nails (rare).* Kidney—*rise in BUN, apparently dose related. Transient increase in urinary output, sometimes accompanied by thirst (rare).* Hypersensitivity reactions—*urticaria, angioneurotic edema, anaphylaxis.* Teeth—*dental staining (yellow-brown) in children of mothers given this drug during the latter half of pregnancy, and in children given the drug during the neonatal period, infancy and early childhood.* Enamel hypoplasia has been seen in a few children. If adverse reaction or idiosyncrasy occurs discontinue medication and institute appropriate therapy.

Average Adult Daily Dosage: 150 mg q.i.d. or 300 mg b.i.d. Should be given 1 hour before or 2 hours after meals, since absorption is impaired by the concomitant administration of high calcium content drugs, foods and some dairy products. Treatment of streptococcal infections should continue for 10 days, even though symptoms have subsided.

In the treatment of syphilis a dosage schedule of a total of 12 to 18 Gm. given in equally divided doses over a period of 10 to 15 days should be followed. Close follow-up observation of the patient is recommended, including appropriate laboratory tests, since demethylchlortetracycline has not had adequate evaluation in all stages of syphilis. Spinal fluid examination should be included as part of this follow-up.

Acute gonococcal anterior urethritis in males has been treated effectively with a single dose of 600-900 mg. of DECLOMYCIN Demethylchlortetracycline. Individuals unable to tolerate large single doses due to gastrointestinal side effects may be treated with 150 mg. every 6 hours for a minimum of 4 doses or 300 mg. every 12 hours for a minimum of 2 doses. Females should be treated with a dosage of 150 mg. every 6 hours or 300 mg. every 12 hours until a cure is effected.

Primary Atypical Pneumonia (Eaton Agent): The average adult daily dosage is 900 mg. in 3 divided doses for six days.

LEDERLE LABORATORIES, A Division of
American Cyanamid Company, Pearl River, N.Y.



► NATIONAL & REGIONAL MEETINGS

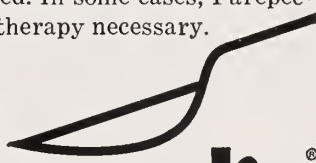
- February 29: Washington-Baltimore Society of Physical Medicine and Rehabilitation: Charles S. Wise Memorial Lecture. D. C. General Hospital, Washington. Address: Dr. David A. Zohn, Chief, Department of Physical Medicine and Rehabilitation, D. C. General Hospital, Washington, D. C. 20003.
- March 3-7: International Academy of Pathology. Drake Hotel, Chicago. Address: Dr. F. K. Mostofi, Secretary-Treasurer, IAP, c/o Armed Forces Institute of Pathology, Washington, D. C. 20305.
- March 11-13: American College of Surgeons (Sectional Meeting for Doctors and Nurses). Williamsburg Inn, Williamsburg, Va. Address: Communications Department, 55 East Erie Street, Chicago, Ill. 60611.
- March 13-15: International Symposium on Radiation Therapy. New York. Address: Dr. Ralph Phillips, Memorial Sloan-Kettering Cancer Center, 444 East 68th Street, New York, N. Y. 10021.
- March 15-16: 14th Annual Conference of State Mental Health Representatives—"Drug Abuse in the Now Generation." Drake Hotel, Chicago. Address: Walter Wolman, Ph.D., Director, Department of Mental Health, 535 North Dearborn Street, Chicago, Ill. 60610.
- March 18-20: American Academy of Pediatrics. Regency Hyatt House, Atlanta, Ga. Address: Dr. Robert G. Frazier, Executive Director, 1801 Hinman Avenue, Evanston, Ill. 60204.
- March 20: National Conference on Suicidology. Conrad-Hilton Hotel, Chicago. Address: Edwin S. Shneidman, Ph.D., Chief, Center for Studies of Suicide Prevention, National Institute of Mental Health, 5454 Wisconsin Avenue, Chevy Chase, Md. 20203.
- March 22-23: Second National Congress on the Socio-Economics of Health Care. Palmer House, Chicago. Address: Council on Medical Service, American Medical Association, 535 North Dearborn Street, Chicago, Ill. 60610.
- March 25-28: Southeastern Surgical Congress. Sheraton-Park Hotel, Washington. Address: Dr. A. H. Letton, Executive Secretary, 840 Boulevard, N.E., Atlanta, Ga. 30312.
- March 29-31: American Society of Internal Medicine. Hotel Statler, Boston. Address: Mr. Edward E. Daleske, Assistant Executive Director, 3410 Geary Blvd., San Francisco, Calif. 94118.
- April 1-5: American College of Physicians. Sheraton-Boston Hotel, Boston. Address: Dr. Edward C. Rosenow, Jr., Executive Director, 4200 Pine Street, Philadelphia, Pa. 19104.
- April 17-19: Medical and Chirurgical Faculty of the State of Maryland. The Alcazar, Baltimore. Address: Mr. John Sargeant, Executive Secretary, 1211 Cathedral Street, Baltimore, Md. 21201.
- April 29-30: Fifth Congress on Environmental Health Problems. Drake Hotel, Chicago. Address: AMA Department of Environmental Health, 535 North Dearborn Street, Chicago, Ill. 60610.



One by one the family's downed Because the G.I. bug's around

Parepectolin for quick relief of acute diarrhea
...soothes colicky pain with paregoric*
...consolidates fluid stools with pectin
...adsorbs irritants with kaolin,
and protects intestinal mucosa.

Whether it's a 24-hour "bug", a food problem, or simply nervousness and anxiety, Parepectolin will bring the diarrhea under control until etiology can be determined. In some cases, Parepectolin may be all the therapy necessary.



Parepectolin[®]

Each fluid ounce of creamy white suspension contains:

*Paregoric (equivalent) (1.0 dram) 3.7 ml.
Contains opium (¼ grain) 15 mg. per fluid

ounce.

warning: may be habit forming

Pectin (2½ grains) 162 mg.

Kaolin (specially purified) (85 grains) 5.5 Gm.
(alcohol 0.69%)

Usual Adult Dose: One or two tablespoonfuls three times daily.

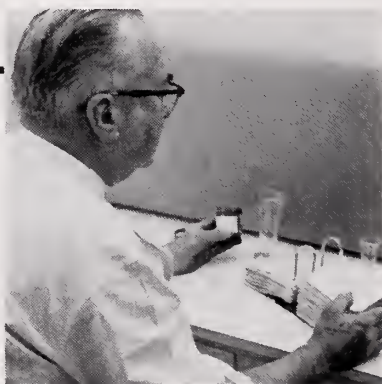
Usual Children's Dose: One or two teaspoonfuls three times daily.



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We have passed the hundred million mark. That's the number of prescriptions filled by all Peoples Drug Stores since we opened our doors in 1905. We say this with great pride, since this impressive figure illustrates an impressive public confidence. Because behind all prescribed medicine at Peoples is confidence — in the physician who prescribes, the manufacturer who supplies, and the pharmacist who fills the prescription. At Peoples, nothing is more important to us than this confidence.



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PRESCRIPTION DRUG STORES



**“Breathing’s
a snap again,”
he said
gingerly.
(COMPLIMENTS OF
DIMETAPP)**

Help clear up that miserable stuffed-up feeling with Dimetapp. Each hard-working Extentab brings welcome relief from the stuffiness, drip and congestion of upper respiratory conditions for up to 10-12 hours. Yet, patients seldom experience drowsiness or overstimulation. The key to success is the Dimetapp formula: Dimetane (brompheniramine maleate)—along with phenylephrine and phenylpropanolamine, two time-tested decongestants. They get the job done ... in a hurry.

Indications: Dimetapp is indicated for symptomatic relief of the allergic manifestations of respiratory illnesses, such as the common cold and bronchial asthma, seasonal allergies, sinusitis, rhinitis, conjunctivitis, and otitis.
Contraindications: Hypersensitivity to antihistamines. Not recommended for use during pregnancy.
Precautions: Until patient’s response has been determined, he should be cautioned against engaging in operations requiring alertness. Administer with care

to patients with cardiac or peripheral vascular diseases or hypertension.
Side Effects: Hypersensitivity reactions including skin rashes, urticaria, hypotension and thrombocytopenia, have been reported on rare occasions. Drowsiness, lassitude, nausea, giddiness, dryness of the mouth, mydriasis, increased irritability or excitement may be encountered.
Dosage: 1 Extentab morning and evening.
Supplied: Bottles of 100 and 500.

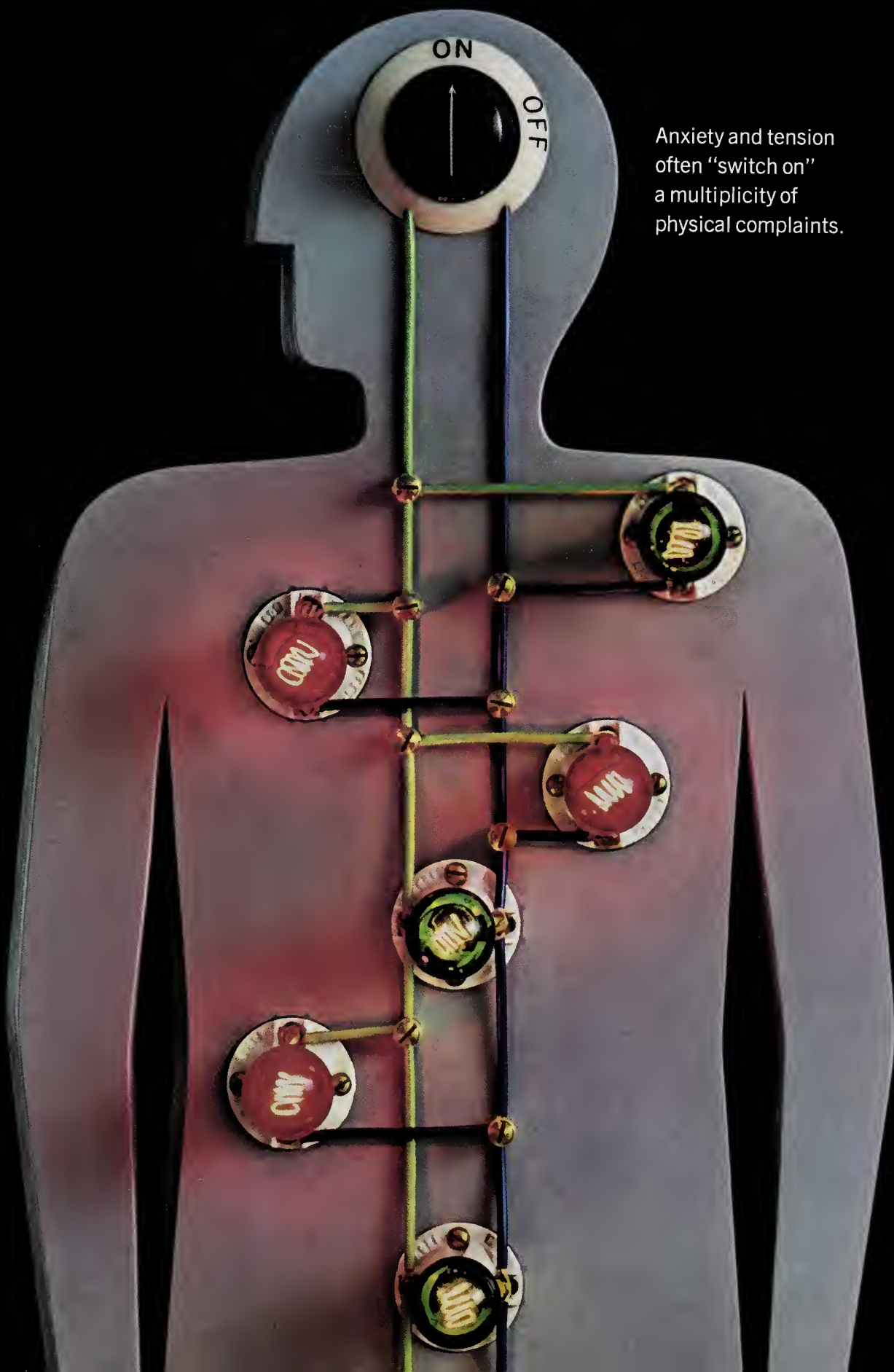
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Dimetapp® Extentabs®

(Dimetane® [brompheniramine maleate], 12 mg.; phenylephrine HCl, 15 mg.; phenylpropanolamine HCl, 15 mg.)

up to 10-12 hours clear
breathing on one tablet





Anxiety and tension often “switch on” a multiplicity of physical complaints.

a tranquilizer with
particular usefulness in
functional disorders

TybatranTM
(pronounced TYE-buh-tran)
brand of tybamate

Extensive clinical experience, including eleven double-blind studies,¹⁻¹¹ indicates that Tybatran is an effective agent for the relief of anxiety and tension. It appears to lend itself particularly well to the management of the anxious patient who "somatizes"—whose anxiety and tension find expression in complaints such as headaches,^{4,8,10,11} fatigue,⁴ insomnia,^{2,4,8,9,12} anorexia,^{3,8,9} and pruritus.⁷

Two salient features seem to set Tybatran somewhat apart from certain other commonly used tranquilizers.

1. Tybatran often proves more effective than meprobamate and chlordiazepoxide. In one study,⁴ severe anxiety responded more effectively to tybamate than to meprobamate; in another,⁸ symptom-response superiority of tybamate over chlordiazepoxide was marked at statistically significant levels of confidence.

2. Tybatran appears to be less sedating than other widely used tranquilizers. Side reactions are relatively infrequent; when they do occur, they may take the form of drowsiness, although insomnia, ataxia and other adverse effects have been reported. Nevertheless, Tybatran impresses many clinicians by its comparative lack of undesirable sedative action.^{3,6,12,13} (If drowsiness or vertigo is present, activities requiring optimal alertness should be avoided.)

For patients in whom anxiety is manifested in any of a multiplicity of physical complaints, Tybatran deserves a clinical trial. These are the challenging patients, those with recurrent, persistent, ever-changing symptoms for which there is no clinical or laboratory evidence of organic disease.

Usual adult dose: one or two 250 mg. capsules 3 or 4 times daily. Adjust to suit individual requirements.

A-H-ROBINS

Prescribing Information

Dosage and administration. The suggested adult dose of Tybatran (tybamate) is one or two 250 mg. capsules three or four times daily. Dosage should be adjusted to suit individual requirements. While clinical experience with Tybatran (tybamate) in children has been very limited to date, the recommended daily dosage for children 6 to 12 years old is 20 to 35 mg./kg. body weight, in three or four equally divided doses. Dosage should be adjusted to suit individual requirements. Until further clinical experience is obtained, administration of Tybatran (tybamate) to children under 6 years of age is not recommended. Daily doses larger than 3000 mg. are not recommended, although in a few instances doses in excess of this figure have been administered. Tybatran (tybamate) is also available in 350 mg. capsules, for convenience in dosage adjustment, e.g., one capsule three times daily and two at bedtime.

Contraindications. Tybatran (tybamate) should not be administered to patients known to be hypersensitive to the drug. Since no studies have been done with this drug in human pregnancy, it should not be used in pregnancy unless the potential benefit outweighs the risk.

Warnings. Simultaneous administration to psychotic patients of tybamate with phenothiazines and other central nervous system depressants has in a few instances been associated with the occurrence of grand mal or petit mal seizures. Seizures have been reported with administration of phenothiazines alone, but not with administration of tybamate alone; nevertheless, tybamate should be used cautiously in individuals who are receiving other central nervous system depressants or have a history of convulsive seizures. Also, it should be borne in mind that simultaneous administration of tybamate with alcohol or with other psychotropic agents, particularly phenothiazines or monoamine oxidase inhibitors, which are known to potentiate the action of other drugs, may result in additive actions.

Precautions. There has been no evidence to date of the development of habituation or addiction. Investigators have not observed excessive self-medication or any withdrawal symptoms with use of Tybatran (tybamate), but the latter should be kept in mind with cessation of the drug after prolonged use. Because of the occurrence of

Prescribing information continued on next page.

(pronounced TYE-buh-tran)

TybatranTM

brand of tybamate

a tranquilizer with
particular usefulness in
functional disorders

Prescribing information continued from preceding page.

withdrawal symptoms or exacerbation of presenting symptoms upon rapid withdrawal of other agents of this type, abrupt withdrawal of Tybatran (tybamate) should be avoided. Tybamate, like other psychotherapeutic agents, should be used with caution in addiction-prone individuals. Should symptoms of hypersensitivity occur, administration should be discontinued at once and appropriate symptomatic treatment initiated. Operation of motor vehicles or machinery or other activities requiring optimal mental alertness should be avoided if drowsiness or vertigo is present. As with any new drug, Tybatran (tybamate), should be used with caution in patients with a history of drug allergies, blood dyscrasias, and hepatic or renal disease; and prolonged and/or high doses of tybamate should be accompanied by periodic measurements of hepatic, hematopoietic, and renal function.

Adverse reactions. While these have only rarely required discontinuation of the drug, the most frequently encountered reactions have included drowsiness, dizziness, nausea, insomnia, euphoria. The drug was discontinued in one child because of a possible drug-induced urticaria, and skin rash and pruritus have been encountered in a few other patients. In a few patients, effects suggesting excessive stimulation such as hyperactivity, fidgetiness, flushing, and tachycardia have been encountered. Other reported side effects recorded only a few times to date have included ataxia, unsteadiness, confusion, feeling of unreality, "panic reaction," fatigue, headache, paresthesias, vertigo, gastrointestinal disturbances, glossitis and dry mouth. Grand mal or petit mal seizures have been reported in a few hospitalized psychotic patients to whom tybamate (up to 6000 mg. daily), phenothiazines, and other psychotropic agents were administered simultaneously. Convulsive seizures have not been reported with the use of tybamate alone.

Until clinical experience has accumulated with this drug, inasmuch as tybamate is related to meprobamate, the physician should be cautious about the possibility of rare, serious adverse reactions such as may be encountered with the latter drug. Should excessive doses of tybamate be ingested, it is recommended that any drug remaining in the stomach be removed and symptomatic therapy, including central stimulants, be used as necessary.

Supply. Tybatran (tybamate) is available in green, sealed capsules of three strengths: 350 mg., 250 mg., and 125 mg. Each strength is supplied in bottles of 100 and 500.

Bibliography.

1. Brick, H.: Doub, W. H., Jr., and Perdue, W. C.: Effects of tybamate on depressive and anxiety states in penitentiary inmates: a preliminary report. *Int. J. Neuropsychiat.* 2:637 (Nov.-Dec.) 1966. 2. Callis, S. B.: A new drug available for treatment of neurosis: double-blind study of tybamate. *Int. J. Neuropsychiat.* 2:645 (Nov.-Dec.) 1966. 3. Chesrow, E. J.; Kaplitz, S. E.; Sabatini, R.; Vetra, H., and Marquardt, G. H.: A new psychotherapeutic agent effective in the management of geriatric anxiety, depression and behavioral reactions. *J. Amer. Geriatr. Soc.* 13:449 (May) 1967. 4. Chieffri, M.: A two-part, double-blind study of the anti-neurotic action of tybamate. *Dis. Nerv. Syst.* 26:369 (June) 1965. 5. Raab, E.; Rickels, K., and Moore, E.: A double-blind evaluation of tybamate in anxious neurotic medical clinic patients. *Amer. J. Psychiat.* 120:1005 (Apr.) 1964. 6. Seeherman, R.: Evaluation of tybamate in the clinical management of anxiety. *Delaware Med. J.* 36:213 (Oct.) 1964. 7. Shapiro, I.: Controlled study of the effects of tybamate on the neurotic component in dermatoses. *Curr. Ther. Res.* 8:99 (Mar.) 1966. 8. Splitter, S. R.: A new psychotropic drug; evaluation of tybamate in the treatment of anxiety and tension states. *Psychosomatics* 5:292 (Sept.-Oct.) 1964. 9. Stern, F. H.: A new drug (tybamate) effective in the management of chronic brain syndrome. *J. Amer. Geriatr. Soc.* 12:1066 (Nov.) 1964. 10. Vazuka, F. A., and McLaughlin, B. E.: Chemotherapy of symptoms of chronic anxiety states and other neurotic disorders. *Psychosomatics* 6:73 (Mar.-Apr.) 1965. 11. Button, J. T., and Cole, W. V.: Treatment of emotional disturbances in clinic patients. *J. Amer. Osteopath. Ass.* 64:812 (Apr.) 1965. 12. Slaughter, I.: Tybamate as an antineurosis drug in the treatment of emotional disorders. *J. New Drugs* 5:177 (May-June) 1965. 13. Dunlop, E.: Tybamate—A new tranquilizer: preliminary report. *Mind* 2:115 (Apr.) 1964.



Books Received

ACKNOWLEDGMENT is made of the following books which have recently been received.

Medical Department, United States Army: Neuropsychiatry in World War II. Vol. 1, Zone of Interior. COLONEL ROBERT S. ANDERSON, Editor in Chief; COLONEL ALBERT J. GLASS AND LIEUTENANT COLONEL ROBERT J. BERNUCCI, Editors for Neuropsychiatry. Prepared and published under the direction of Lieutenant General Leonard D. Heaton, The Surgeon General, United States Army. Price, \$7.50. Pp. 898, with 65 illustrations. Washington, D. C. 20402: U. S. Government Printing Office, 1967.

Cardiovascular Physiology. ROBERT M. BERNE, M.D., AND MATTHEW N. LEVY, M.D. Price, \$10.75. Pp. 254, with 148 illustrations. St. Louis: Mosby, 1967.

Atlas of Infant Surgery. J. EUGENE LEWIS, JR., M.D. Price, \$21.00. Pp. 258, with 87 plates of illustrations by Ramona Morgan, B.F.A. St. Louis: Mosby, 1967.

Atlas of Glaucoma Surgery. JOHN M. McLEAN, M.D. Price, \$17.50. Pp. 125, with 88 figures prepared by Shirley Baty. St. Louis: Mosby, 1967.

Laboratory Medicine: Hematology, 3rd ed. JOHN B. MIALE, M.D. Price, \$21.00. Pp. 1257, with 555 illustrations and 25 plates, including 10 in color. St. Louis: Mosby, 1967.

Burns, Shock, and Plasma Volume Regulation. CARL A. MOYER, M.D., AND HARVEY R. BUTCHER, JR., M.D. Price, \$18.50. Pp. 428, with 138 illustrations. St. Louis: Mosby, 1967.

Atlas of Strabismus. GUNTER K. VON NOORDEN, M.D., AND A. EDWARD MAUMENEE, M.D. Price, \$17.50. Pp. 188, with 115 illustrations, 29 in color, by Robert B. Wingate, M.S. St. Louis: Mosby, 1967.

Ciba Foundation Study Group No. 27. The Human Adrenal Cortex: Its Function Throughout Life. In Honour of Professor Dr. h.c.F. Verzar. Edited by G. E. W. WOLSTENHOLME AND RUTH PORTER. Price, \$4.25. Pp. 146, with 26 illustrations. Boston: Little, Brown, 1967.

Drug Responses in Man. A Ciba Foundation Volume. Edited by GORDON WOLSTENHOLME AND RUTH PORTER. Price, \$13.00. Pp. 257, with 23 illustrations. Boston: Little, Brown, 1967.

Learning Medical Terminology Step by Step. CLARA GENE YOUNG AND JAMES D. BARGER, M.D., F.A.C.P. Price, \$7.50. Pp. 327, with 39 illustrations. St. Louis: Mosby, 1967.

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**"Hey,
Mrs. Simmons,
can Fatty come
out and play?"**

Fatty, that's what the other kids call Joel. And like many pudgy youngsters, he hides inside what he's afraid to show on the outside.

His mother doesn't realize that his baby fat is fast becoming obesity.

Now is the time to help.

Now is the time for you, as a professional, to educate his mother. Explain the importance of a bal-

anced diet — meat, breads and cereals, fruits and vegetables and dairy foods. Stress proper rest and exercise.

Project Weight Watch can help, too. Our free portfolio includes professionally prepared materials to help mothers learn about children's diets. Send for them today.



If Fatty loses, Joel wins.

Name

Position

Address

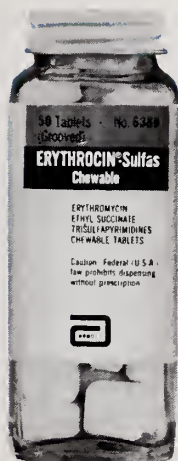
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DAIRY COUNCIL of Greater Metropolitan Washington, D. C. 1511 K STREET, N.W. WASHINGTON, D. C. 20005



Perhaps there have been times when you wanted to prescribe erythromycin and triple sulfas for little patients. Now you can—with a choice of two new fine-tasting pediatric forms.

New—Two Pediatric Forms of Erythromycin and Triple Sulfas



ERYTHROCIN®-SULFAS Chewable (Erythromycin ethyl succinate-trisulfapyrimidines chewable tablet)

In clinical trials^{1,2}, this orange-flavored tablet was given to 55 patients, aged four months to 18 years.

Diagnoses (multiple in some cases) represented a cross section of bacterial infections commonly seen in pediatric office practice.

Therapy was given from three to 12 days, with an average of six days.

Of the 55 patients, 30 were reported cured within 72 hours, while 22 showed partial recovery within the same time, and subsequent clinical cure.

A clinical cure rate of 94.5%



ERYTHROCIN®-SULFAS Granules (Erythromycin ethyl succinate-trisulfapyrimidines granules for oral suspension)

87 patients were treated^{1,2}—all children, ages four months to 15 years.

The diagnoses were multiple in some cases and were chiefly bacterial infections of the respiratory tract.

Dosage was maintained from three to 10 days; average treatment was five days. All of the ill children accepted the orange-flavored suspension favorably.

53 were clinically cured within 72 hours, while 32 showed partial relief within the same time, and subsequent clinical cure.

701359

A clinical cure rate of 97.7%

1. Case Reports on File, Dept. Clin. Development, Abbott Laboratories.
2. Polley, R.F.L., Use of Erythromycin-Sulfas in Office Practice, Western Med., 7:177, July, 1966.



Brief
Summary
on next
page

ERYTHROCIN®-SULFAS

Brief Summary

Contraindications: Known sensitivity to erythromycin or sulfonamides. Because of the possibility of kernicterus with sulfonamides, do not use in pregnancy at term, premature or newborn infants.

Warnings: As with other forms of sulfonamide therapy, carefully evaluate patients with liver or kidney damage, urinary obstruction, or blood dyscrasia. Deaths have been reported from hypersensitivity reactions and blood dyscrasias following use of sulfonamides. Perform blood counts and liver and kidney function tests if used repeatedly at close intervals or for long periods.

Precautions, Side Effects: Occasionally mild abdominal discomfort, nausea or vomiting may occur with erythromycin, generally controlled by reduction of dosage. Mild allergic reactions (such as urticaria and other skin rashes) may occur. Serious allergic reactions have been extremely infrequent. Use sulfonamides with caution in patients with a history of allergy. Assure adequate fluid intake to prevent crystalluria and institute alkali therapy if indicated. If overgrowth of nonsusceptible organisms occurs, withdraw the drug and institute appropriate treatment. If a patient should show signs of hypersensitivity, appropriate countermeasures (e.g. epinephrine, steroids, etc.) should be administered and the drug withdrawn.

Adverse Reactions: Sulfonamide therapy may be associated with headache, nausea, vomiting, urticaria, diarrhea, hepatitis, pancreatitis, blood dyscrasias, neuropathy, drug fever, skin rash, injection of the conjunctiva and sclera, petechiae, purpura, hematuria and crystalluria.

Side effects due to erythromycin are infrequent, but occasional abdominal discomfort, nausea, or vomiting, urticaria and other skin rashes may occur.

Supplied: The Granules for Oral Suspension come in bottles of 60 ml. and 150 ml. The Chewable tablets are in bottles of 50. Each 5-ml. teaspoonful of reconstituted Granules or each Chewable tablet provides erythromycin ethyl succinate equivalent to 125 mg. of erythromycin activity and 167 mg. of each of sulfadiazine, sulfamerazine and sulfamethazine.



701358

To fight TB- find it first!

Make tuberculin testing routine
with every physical examination.

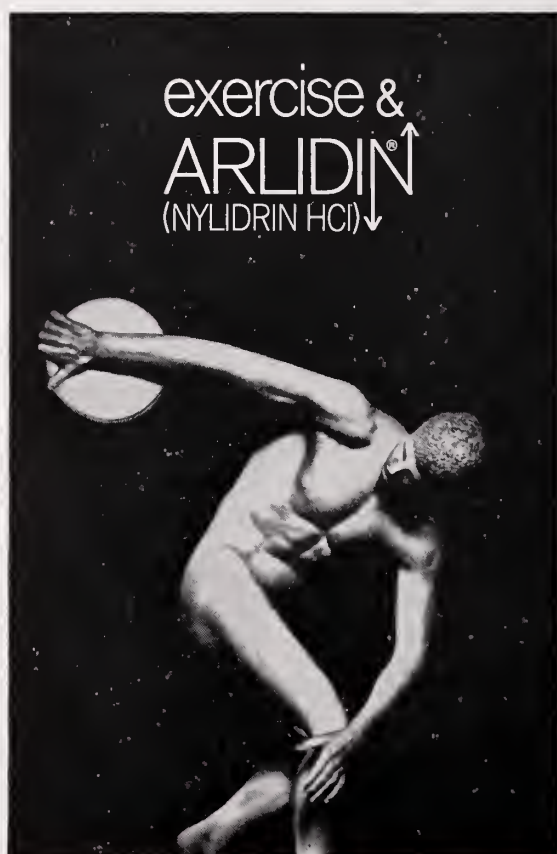


TUBERCULIN_(Rosenthal) TINE TEST

Side effects are possible but rare: vesiculation, ulceration, or necrosis at test site. Contraindications: none, but use with caution in active tuberculosis. Available in 5's and 25's.



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COUGH AND STUFFED AND RUNNY NOSE. TUSSAGESIC IS THE FAMOUS

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Dextromethorphan hydrobromide	30 mg.
Terpin hydrate	180 mg.
Acetaminophen	325 mg.

Dosage: Adults—1 tablet, swallowed whole to preserve timed-release feature, in morning, midafternoon and at bedtime. **Side effects:** Occasional drowsiness, blurred vision, cardiac palpitations, flushing, dizziness, nervousness or gastrointestinal upsets. **Precautions:** The patient should be advised not to drive a car or operate dangerous machinery if drowsiness occurs. Use with caution in patients with hypertension, heart disease, diabetes or thyrotoxicosis.

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Tussagesic timed-release tablets

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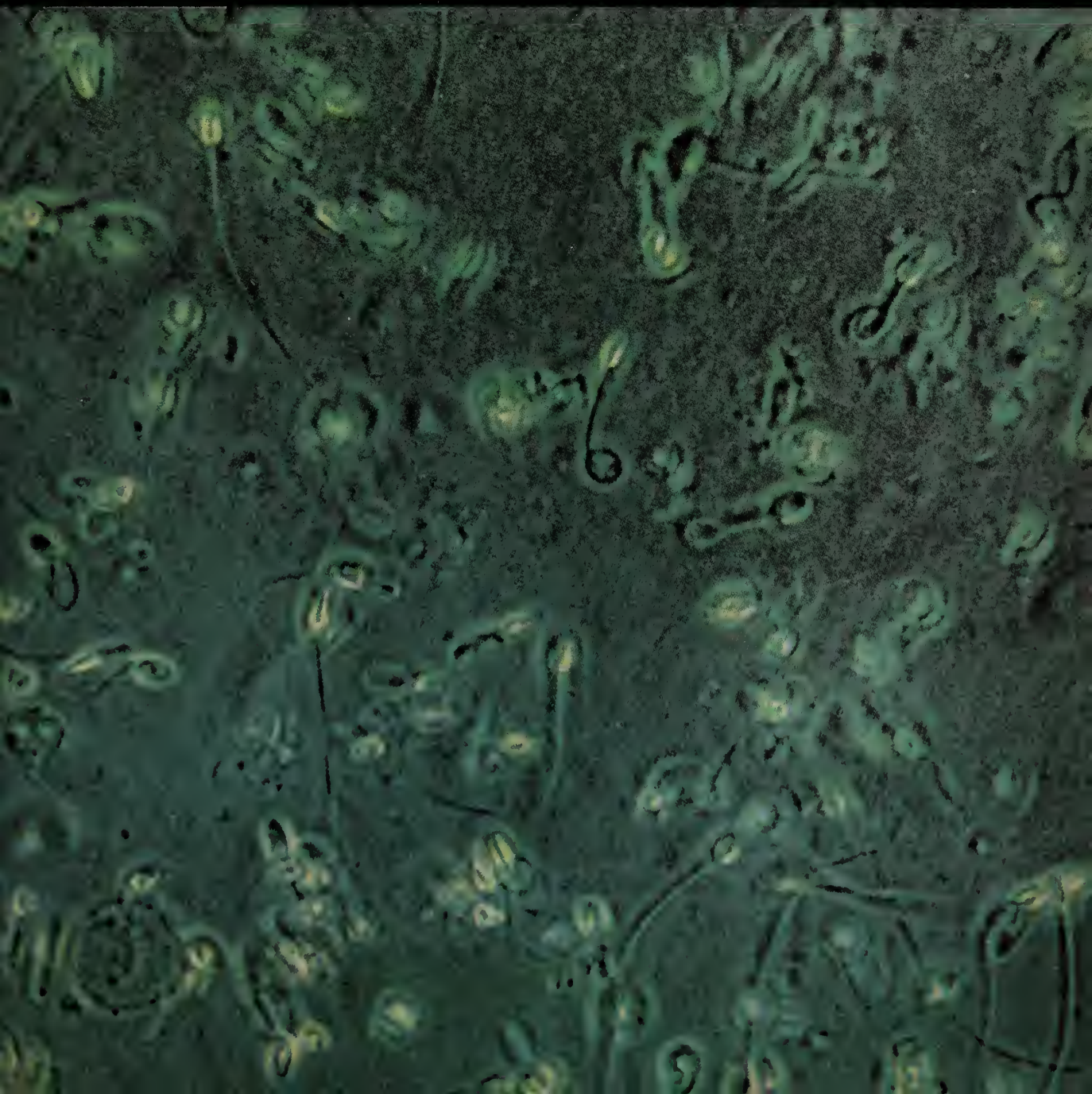
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Fast delivery by your Dorsey
Representative

When the talk turns to oral contraceptives, it makes medical sense to remember low-dose Norinyl-1.

(norethindrone 1mg & mestranol 0.05mg)

Turn page for contraindications, precautions and side effects.



Reduction of oral contraceptive dosage to the lowest effective levels is a well-accepted principle of conservative medical practice. In keeping with this view, Norinyl is now also available as Norinyl-1, containing exactly one half the previous dosage of norethindrone and mestranol. Clinical experience has established that effective fertility control can be achieved with the same degree of reliability and safety with new Norinyl-1 when taken as directed.

What about switching patients from higher dosage forms?

In transferring patients to low-dose Norinyl-1 from higher-dosage oral contraceptives, some breakthrough bleeding may occur in the early cycles. In the majority of cases the bleeding episode is mild and self-limited. The long-term advantages of the lower dosage form should be weighed against the inconvenience of possible breakthrough bleeding in the individual patient.

Contraindications: 1. Patients with thrombophlebitis or with a history of thrombophlebitis or pulmonary embolism. 2. Liver dysfunction or disease. 3. Patients with known or suspected carcinoma of the breast or genital organs. 4. Undiagnosed vaginal bleeding.

Warnings: 1. Discontinue medication pending examination if there is sudden partial or complete loss of vision or if there is a sudden onset of proptosis, diplopia or migraine. If examination reveals papilledema or retinal vascular lesions, medication should be withdrawn. 2. Since the safety of NORINYL-1 (norethindrone 1 mg. with mestranol 0.05 mg.) in pregnancy has not been demonstrated, it is recommended that for any patient who has missed two consecutive periods, pregnancy should be ruled out before continuing the contraceptive regimen. If the patient has not adhered to the prescribed schedule, the possibility of pregnancy should be considered at the time of the first missed period. 3. Detectable amounts of the active ingredients in oral contraceptives have been identified in the milk of mothers receiving these drugs. The significance of this dose to the infant has not been determined.

Precautions: 1. The pretreatment physical examination should include special reference to breast and pelvic organs, as well as a Papanicolaou smear. 2. Endocrine and possibly liver function tests may be affected by treatment with NORINYL-1. Therefore, if such tests are abnormal in a patient taking NORINYL-1 it is recommended that they be repeated after the drug has been withdrawn for two months. 3. Under the influence of estrogen-progestogen preparations, preexisting uterine fibromyomata may increase in size. 4. Because these agents may cause some degree of fluid retention, conditions that may be influenced by this factor, such as epilepsy, migraine, asthma, cardiac or renal dysfunction, require careful observation. 5. NORINYL-1 should be used with caution in patients with a history of cerebrovascular accident. 6. In relation to breakthrough bleeding, and as in all cases of irregular bleeding *per vaginam*, nonfunctional causes should be borne in mind. In cases of undiagnosed vaginal bleeding, adequate diagnostic measures are indicated. 7. Patients with a history of psychic depression should be carefully observed and the drug discontinued if the depression recurs to a serious degree. 8. Any possible influence of prolonged NORINYL-1 therapy on pituitary, ovarian, adrenal, hepatic or uterine function awaits further study. 9. A decrease in glucose tolerance has been observed in a small percentage of patients on oral contraceptives. The mechanism of this decrease is obscure. For this reason, diabetic patients should be carefully observed while receiving NORINYL-1 therapy.

10. Because of the occasional occurrence of thrombophlebitis and pulmonary embolism in patients taking oral contraceptives, the physician should be alert to the earliest manifestations of the disease. 11. Because of the effects of estrogens on epiphyseal closure, NORINYL-1 should be used judiciously in young patients in whom bone growth is not complete. 12. The age of the patient constitutes no absolute limiting factor, although treatment with NORINYL-1 may mask the onset of the climacteric. 13. The pathologist should be advised of NORINYL-1 therapy when relevant specimens are submitted.

Side effects observed in patients receiving oral contraceptives: The following adverse reactions have been observed in patients receiving oral contraceptives: nausea, vomiting, gastrointestinal symptoms (such as abdominal cramps and bloating), breakthrough bleeding, spotting, change in menstrual flow, amenorrhea, edema, chloasma or melasma, breast changes (tenderness, enlargement and secretion), change in weight (increase or decrease), changes in cervical erosion and cervical secretions, suppression of lactation when given immediately postpartum, cholestasis, jaundice, migraine, rash (allergic), rise in blood pressure in susceptible individuals, mental depression.

Although the following side effects have been reported in users of oral contraceptives, no cause and effect relationship has been established: anovulation post-treatment, premenstrual-like syndrome, change in libido, changes in appetite, cystitis-like syndrome, headache, nervousness, dizziness, fatigue, backache, hirsutism, loss of scalp hair, erythema multiforme, erythema nodosum, hemorrhagic eruption, itching.

The following occurrences have been observed in users of oral contraceptives (a cause and effect relationship has been neither established nor disproved): thrombophlebitis, pulmonary embolism, neuro-ocular lesions.

The following laboratory results may be altered by the use of oral contraceptives: increased sulfobromophthalein and other hepatic function tests, coagulation tests (increase in prothrombin, Factors VII, VIII, IX and X), thyroid function (increase in PBI and butanol extractable protein-bound iodine and decrease in T^3 values), metyrapone test, pregnanediol determination.



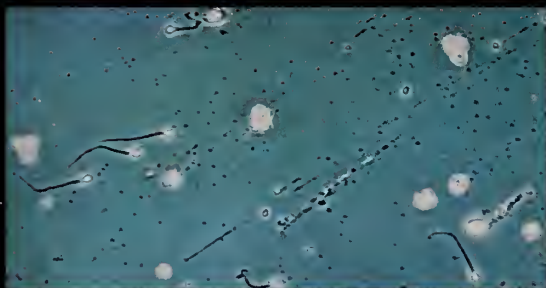
Here's why Norinyl-1 makes medical sense.

The effectiveness of Norinyl-1 as a low-dose oral contraceptive may be explained by its possible multiple action. In addition to its primary action of suppression of ovulation, Norinyl-1 may offer additional protective mechanisms... (1) creation of a cervical mucus that may be hostile to sperm penetration, and (2) development of an endometrium that may be out of phase with nidation. These effects are illustrated below.

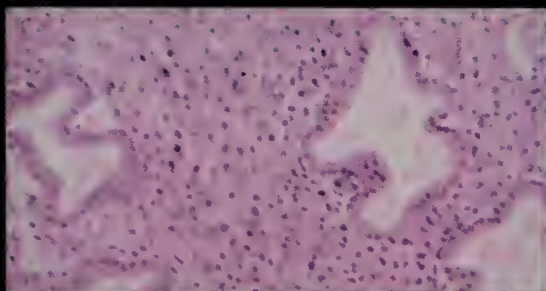
Untreated Patient



Cervical mucus at midcycle is usually thin and watery, with Spinnbarkeit (stretchability) of 15 to 20 cm.



Spermatozoa appear healthy, active, freemoving.

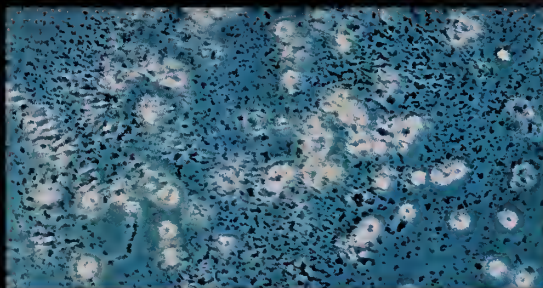


Endometrium of untreated patient is receptive to the fertilized ovum during secretory phase.

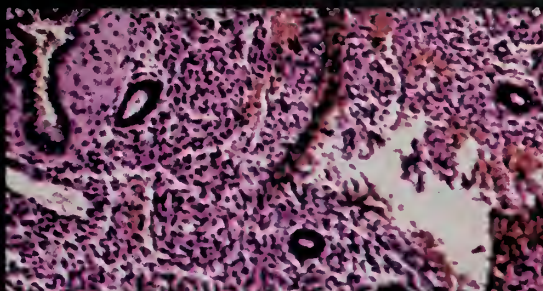
Norinyl-1 Patient



Cervical mucus at midcycle is scanty, viscous—with Spinnbarkeit of 1 cm. or less.



Immobile spermatozoa as they appear in cervical mucus taken from patient treated with Norinyl-1.



Norethindrone in Norinyl-1 accelerates secretory phase, suppresses glandular and vascular development.

Norinyl-1
(norethindrone 1mg. & mestranol 0.05mg.) tablets

- new low dose of time-proved ingredients
- established norethindrone/mestranol ratio
- lower patient cost

An uncommon steroid for common inflammatory dermatoses

In everyday topical steroid therapy, Synalar produces rapid resolution of inflammation and itching in steroid-responsive dermatoses—and at relatively low cost to the patient.

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Synalar combines the advantage of earlier corticosteroid compounds with unique structural innovations. As a result, preparations of Synalar 0.01% and Synalar 0.025% have been reported to be more potent topically and significantly more effective than hydro-

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Impressive clinical results in a wide range of dermatologic problems

The clinical efficacy of Synalar has been extensively documented in the world literature. Commonly encountered diseases such as allergic and contact dermatitis, eczematous and seborrheic dermatitis, and neurodermatitis respond rapidly to Synalar, often

where previous therapy with other topical corticosteroids has failed.

Low patient cost for wider usefulness

With Synalar, a high degree of efficacy does not mean high price. And—a small quantity goes a long way. Thus, your patients can often obtain the “economy” of a hydrocortisone preparation with the proved efficacy of a potent, truly advanced steroid.

Synalar[®]
fluocinolone acetonide





For everyday topical steroid therapy

Synalar® 0.01%

fluocinolone acetonide

provides economy in two practical dosage forms

For general use, the most economical and widely applicable concentration of Synalar is 0.01% Cream in a water-washable, vanishing cream base. Synalar Solution 0.01% is especially valuable in dermatoses involving moist, intertriginous areas or hairy sites where creams and ointments do not spread or penetrate readily. Synalar Solution is a unique dosage form—clear, nongreasy, cosmetically elegant.

Product Information

Contraindications: Tuberculous, fungal, and most viral lesions of the skin (including herpes simplex, vaccinia, and varicella). Not for ophthalmic use. Contraindicated in individuals with a history of hypersensitivity to any of the components.

Precautions: Synalar preparations are virtually nonsensitizing and nonirritating. However, the solution may produce burning or stinging when applied to denuded or fissured areas. In some patients with dry lesions, the solution may increase dryness, scaling or itching. Where severe local infection or systemic infection exists, the use of systemic antibiotics should be considered, based on susceptibility testing. While topical steroids have not been reported to have an adverse effect on pregnancy, the safety of their use on pregnant females has not absolutely been established. Therefore, they should not be used extensively on pregnant patients, in large amounts, or for

prolonged periods of time. **Side Effects:** Side effects are uncommon with topical corticosteroids. As with all drugs, however, a few patients may react unfavorably to Synalar under certain conditions. In such cases the agent should be discontinued and appropriate measures taken. **Availability:** Synalar (fluocinolone acetonide) Cream 0.025%—5, 15 and 60 Gm. tubes and 425 Gm. jars. Cream 0.01%—15, 45 and 60 Gm. tubes and 120 Gm. jars. Solution 0.01%—20 and 60 cc. plastic squeeze bottles. Ointment 0.025%—15 and 60 Gm. tubes. Neo-Synalar® (neomycin sulfate 0.5% [0.35% neomycin base], fluocinolone acetonide 0.025%) Cream—5, 15 and 60 Gm. tubes.

fluocinolone acetonide—an original steroid from
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anticostive, *adj.* (*anti* opposed to
+ *costive* causing constipation.)
Against constipation. (Now isn't
that a good idea in an iron-contain-
ing hematinic?)

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Hematinic with Vitamins and Fecal Softener

A tablet-a-day provides:

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like an up-to-date, once-a-day dosage schedule
(a schedule not unlike timed-release medication, for example)

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(as described in the package insert, for example)

...give them a little
(one tablet daily)

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chlorthalidone 50 mg., reserpine 0.25 mg.

Indications: Hypertension. **Contraindications:** History of mental depression, hypersensitivity, and most cases of severe renal or hepatic diseases. **Warning:** With the administration of enteric-coated potassium supplements, which should be used only when adequate dietary supplementation is not practical, the possibility of small-bowel lesions (obstruction, hemorrhage, and perforation) should be kept in mind. Surgery for these lesions has frequently been required and deaths have occurred. Discontinue coated potassium-containing formulations immediately if abdominal pain, distention, nausea, vomiting, or gastrointestinal bleeding occur. Discontinue one week before electroshock therapy, and if depression or peptic ulcer occurs. **Use in pregnancy:** Regroton should be used in pregnant patients or in women of childbearing potential only when, in the judgment of a physician, its use is deemed essential to the welfare of the patients; adverse reactions (thrombocytopenia, hyperbilirubinemia, altered carbohydrate metabolism, etc.) are potential problems in the newborn.

Precautions: Antihypertensive therapy with Regroton should always be initiated cautiously in postsympathectomy patients and in patients receiving ganglionic blocking agents, other potent antihypertensive drugs, or curare. Reduce dosage of concomitant antihypertensive agents by at least one-half. To avoid hypotension during surgery, discontinue Regroton therapy two weeks prior to elective surgical procedures. In emergency surgery, use, if needed, anticholinergic or adrenergic drugs or other supportive measures as indicated. Because of the possibility of progression of renal damage, periodic kidney function tests are indicated. Discontinue if the BUN rises or liver dysfunction is aggravated. Hepatic coma may be precipitated. Electrolyte imbalance, sodium and/or potassium depletion may occur. If potassium depletion should occur during therapy, Regroton should be discontinued and potassium supplements given, provided the

patient does not have marked oliguria. Take particular care in cirrhosis or severe ischemic heart disease and in patients receiving corticosteroids, ACTH, or digitalis. Salt restriction is not recommended. Use cautiously in patients with ulcerative colitis or gallstones (biliary colic may be precipitated). Bronchial asthma may occur in susceptible patients. **Adverse Reactions:** The drug is generally well tolerated. The most frequent side effects are nausea, gastric irritation, vomiting, diarrhea, constipation, muscle cramps, headache, dizziness and acute gout. Other potential side effects include angina pectoris, anxiety, depression, bradycardia and ectopic cardiac rhythms (especially when used with digitalis), drowsiness, dull sensorium, hyperglycemia and glycosuria, hyperuricemia, lassitude, restlessness, transient myopia, impotence or dysuria, orthostatic hypotension which may be potentiated when chlorthalidone is combined with alcohol, barbiturates or narcotics, leukopenia, aplastic anemia, skin rashes, thrombocytopenia, agranulocytosis, nasal stuffiness, increased gastric secretions, nightmare, purpura, urticaria, ecchymosis, weakness, uveitis, optic atrophy and glaucoma, and pruritus. Eruptions and/or flushing of the skin, a reversible paralysis agitans-like syndrome, blurred vision, conjunctival injection, increased susceptibility to colds, dyspnea, weight gain, decreased libido, dryness of the mouth, deafness, anorexia, and pancreatitis when epigastric pain or unexplained G.I. symptoms develop after prolonged administration. Jaundice, xanthopsia, paresthesia, photosensitization and necrotizing angitis are possible. **Average Dosage:** One tablet daily with breakfast. **Availability:** Pink, single-scored tablets in bottles of 100 and 1000. (B) 46-600-B
For details, see complete Prescribing Information.



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This pain is getting on my nerves.

Patients in pain often experience concomitant anxiety and tension, which may add to the burden of pain.

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A good choice is often EQUAGESIC® (meprobamate and ethoheptazine citrate with aspirin). It helps relieve pain. And anxiety. And skeletal muscle spasm as related to pain or anxiety and tension.

Equagesic® TABLETS (meprobamate and ethoheptazine citrate with aspirin)



Contraindications: History of sensitivity or severe intolerance to aspirin or meprobamate.

Warnings: USE IN PREGNANCY: Safety for use during pregnancy or lactation has not been established; therefore it should be used in pregnant patients or women of child-bearing age only when the physician judges its use essential to the patient's welfare.

Precautions: Keep out of reach of children. Not recommended for patients 12 years old or less. Carefully supervise dose and amounts prescribed, especially for patients prone to overdose themselves. Excessive prolonged use of meprobamate may result in dependence or habituation in susceptible persons—as alcoholics, ex-addicts, severe psychoneurotics. Withdraw gradually after prolonged high dosage to avoid possibly severe withdrawal reactions including epileptiform seizures. Warn patients of possible reduced alcohol tolerance. If drowsiness, ataxia or visual disturbances (impairment of accommodation and visual acuity) occur, reduce dose. If symptoms persist, caution patients against operating machinery or driving. After meprobamate overdose, prompt sleep, reduction of blood pressure, pulse and respiratory rates to basal levels, and hyperventilation are reported. Give cautiously to patients with suicidal tendencies. Treat attempted suicide (has resulted in coma, shock, vasomotor and respiratory collapse and anuria) with immediate gastric lavage and appropriate supportive therapy (CNS stimulants and pressor amines as indicated).

Side Effects: Ethoheptazine and aspirin may occasionally cause nausea, vomiting, epigastric distress, and rarely dizziness. Overdosage may result in CNS depression (drowsiness and lightheadedness) or CNS stimulation and salicylate intoxication (requires induced vomiting or gastric lavage, specific parenteral electrolyte therapy for ketoacidosis and dehydration, and observation for hypoprothrombinemic hemorrhage [usually requires whole blood transfusions]). Meprobamate may cause drowsiness, ataxia and rarely allergic or idiosyncratic reactions. These reactions, sometimes severe, can develop in patients receiving only 1 to 4 doses who have had no previous contact with meprobamate. Mild reactions are characterized by urticarial or erythematous maculopapular rash. Acute nonthrombocytopenic purpura with petechiae, ecchymoses, peripheral edema and fever have been reported. If allergic reaction occurs, meprobamate should be stopped and not reinstituted. Severe reactions, observed very rarely, include angio-neurotic edema, bronchial spasms, fever, fainting spells, hypotensive crises (1 fatal case), anaphylaxis, stomatitis and proctitis (1 case) and hyperthermia. Treat symptomatically such as with epinephrine, antihistamine and possibly hydrocortisone. A few cases of leucopenia, usually transient, have been reported following continuous use. Rarely, cases of aplastic anemia (1 fatal case), thrombocytopenic purpura, agranulocytosis, and hemolytic anemia have been reported; almost always, in the presence of known toxic agents.

Composition: 150 mg. meprobamate, 75 mg. ethoheptazine citrate and 250 mg. aspirin per tablet.

Wyeth Laboratories Philadelphia, Pa.



Now...twice as much as before in each teaspoon

400,000 units of potassium penicillin V per teaspoonful
New...V-Cillin K[®], Pediatric, 250 mg.
Potassium Phenoxyethyl Penicillin



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Chromosomal Analysis in Spontaneous Abortion

JAI YEOUNG AHN, M.D.,* WILLIAM J. JAFFURS, M.D.,† AND CECIL B. JACOBSON, M.D.‡

THE INCIDENCE of lethal genetic damage in human reproduction has shown considerable variance in gestational stage, geographic location, seasonal periods, and racial background.¹⁻⁹

The general trend of cases reported in the literature¹⁰ indicates an incidence of 30 per cent discernible chromosomal anomalies in early abortuses, with women with the greater cytogenetic imbalances aborting earlier. Recent reports¹¹ describe a collaborative approach to the study of abortion which is being applied internationally.¹²

The present study was designed to explore the incidence of chromosomally anomalous embryos in women who aborted immediately following the seasonal peak of viral infections and the relative increase in spontaneous abortions in the Washington area.¹³

Methods and Materials

Culture methods similar to those described in the collaborative cytogenetic study of gestational anomalies,^{11, 12} were utilized. Specimens were collected in sterile Hanks balanced salt solution (BSS) and stored at 4° C. All material was examined under a dissecting microscope; fetal measurements were taken and tissues selected for culture. Multiple tissues were minced with iridectomy scissors to achieve a cellular suspension with small tissue fragments.¹⁴ Cultures were planted in disposable T-15 Falcon flasks with 10 c.c. of tissue culture media and 10 per cent fetal calf serum.^{15, 16} Only primary cultures were

processed with no pretrypsinization. Care was taken to set only recognizable fetal tissue.

The cultures were harvested when fibroblast outgrowths from the explants reached 70 to 80 per cent coverage. Efforts were made to minimize time in culture. Twenty-four hours after changing media, 1 meg. of Colcemide (CIBA) was added to the cultures and mitotic arrest extended for 6 to 8 hours. The glass was then "knocked" to dislodge loosely attached metaphase cells and repeated with 2 rinses of Hanks BSS. All media were decanted into a siliconized conical centrifuge tube and spun at 800 rpm for 5 minutes in order to concentrate the cells. If sufficient cells were not dislodged, 0.25 per cent trypsin in a calcium-free solution was added for 10 minutes. No subculturing was done, but the original flask was kept in case insufficient mitoses had been recovered. In order to minimize culture-induced selection against abnormal cells a modification of the phytohemagglutinin (PHA)-stimulated peripheral blood culture was utilized.^{17, 18} Excellent mitotic results are obtainable from whole blood,¹⁹ and antigenic stimulation was used in early lymphopoietic tissues.¹¹

In fetuses over 80 Gm. cardiac blood was obtained and 2 drops were inoculated into constituted TC chromosome medium (DIFCO). In early embryos, kidney anlage (8 weeks), liver (10 weeks), spleen (12-30 weeks), and thymus were finely minced and inoculated into TC medium. The pH was maintained at 7.2 with 10 per cent sodium bicarbonate or 5 per cent carbon dioxide.

All preparations were processed as a cellular suspension, and fixed slides were photographically analyzed.¹¹ Multiple primary cultures from the same specimen were analyzed, and all aneuploid spreads were karyotyped. Specimen material not cultured was fixed in Bouin's solution and stored in alcohol for later histologic evaluation.

Sex chromatin was investigated both in tissue sections and tissue cultures with Giemsa, cresylecht violet, or hematoxylin stain. A gesta-

* Instructor, Department of Obstetrics and Gynecology, School of Medicine, Yonsei University, Seoul, Korea; formerly Resident in Obstetrics and Gynecology, Columbia Hospital for Women.

† Director, Department of Pathology, Columbia Hospital for Women, Washington, D. C. 20037; Assistant Clinical Professor of Pathology, George Washington University School of Medicine.

‡ Consultant in Medical Cytogenetics, Research Foundation, Columbia Hospital for Women; Instructor in Obstetrics and Gynecology, George Washington University School of Medicine.

tional summary including past and present pregnancies, environmental exposure, and drug intake was prepared.

Report of Cases

Case 1. A 24-year-old white woman, gravida II, Para 0, abortio 1, presented herself at 12 weeks' gestation with vaginal spotting and cramps for 2 days. An intact empty embryonic sac measuring 5.5 cm. was removed from the vaginal cavity. No fetal structure was found upon examination of the opened sac. Chromosomal study revealed a 45 (XO) cell line; sex chromatin study was negative (figure 1).

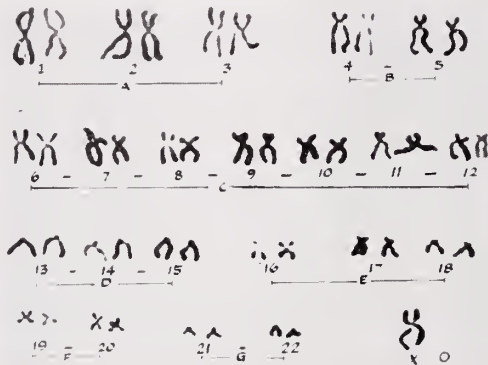


FIG. 1. Case 1. Karyotype 45(XO) monosomy X.

Case 2. A 33-year-old white woman, gravida V, Para 0, abortio 4, at 14 weeks gave a history of spotting for 2 weeks. Heavy bleeding for 3 days prior to admission was followed by curettage. A specimen consisting of an intact amniotic sac (5 cm.) which lacked any definitive embryo or fetus was interpreted as a "blighted ovum." Chromosomal study revealed 47 (XX) with trisomy 17-18; a positive sex chromatin pattern was reported (figure 2).

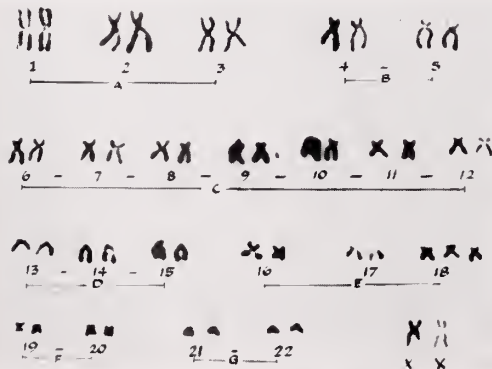


FIG. 2. Case 2. Karyotype 47(XX) trisomy-18.

Case 3. A 42-year-old white woman, gravida III, Para 1, abortio 1, entered at 22 weeks' gestation. A previous circlage was done for incompetent cervix in 1964 and was repeated at 15 weeks for this pregnancy.

Fetal death in utero occurred about this time, and 1 month later the suture was removed. The patient stained for 10 days prior to admission. The uterus was enlarged consistent with an 8 to 10 weeks' pregnancy. Evacuation of the uterus produced a macerated female fetus (40 Gm.) measuring 13 cm. (crown-heel). No gross congenital malformation was noted. Chromosomal analysis was 47 (XX) with trisomy-G (21-22); sex chromatin study was positive.

Case 4. A 25-year-old white woman, gravida III, Para 2, abortio 0, entered at 12 weeks' gestation complaining of vaginal bleeding and abdominal cramps for 2 days. The size of the uterus was consistent with a 12 weeks' pregnancy. The cervical os was dilated, admitting a fingertip; placental fragments and tissue protruded through the os. Curettage yielded placental and decidual fragments. Chromosome study from 25 cells showed triploidy-XXX; sex chromatin study was single positive (figure 3).

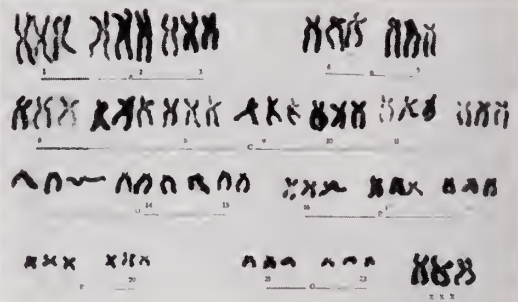


FIG. 3. Case 4. Karyotype 69(XXX) triploidy.

Case 5. A 27-year-old white woman, gravida II, Para 1, abortio 0, entered at 13 weeks' gestation, having experienced spotting and abdominal cramps for 5 days. Curettage produced a large saccular mass of placental and glistening, tan, decidual tissue (7.5 cm.). No fetus or embryo was found. The chromosomal study revealed tetraploidy (92-XXYY); sex chromatin was unsatisfactory (figure 4).

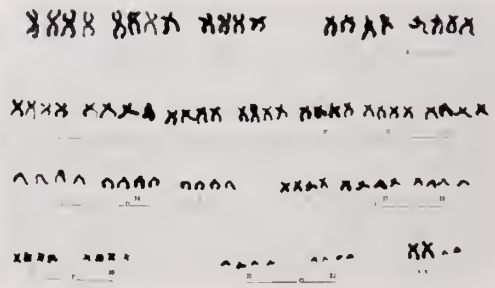


FIG. 4. Case 5. Karyotype 92(XXYY) tetraploidy.

Case 6. A 26-year-old white woman, gravida III, Para 2, abortio 0, entered after vaginal spotting for 7 days in the twelfth week of this pregnancy. This was followed by severe cramps and heavy vaginal

bleeding on the day of admission. The uterus was enlarged consistent with an 8 weeks' pregnancy, and the cervix was 3 cm. dilated. Evacuation of the uterus produced a small, empty saccular structure (6 cm.) containing serous amniotic fluid. There was no discernible fetus or embryo, and it was interpreted as a "blighted ovum." Chromosomal analysis revealed 45 (XX) monosomy-16; sex chromatin was positive.

Case 7. A 23-year-old white woman, gravida III, Para 1, abortio 1, entered at 19 weeks' gestation complaining of intermittent vaginal spotting and gradually intensifying abdominal cramps for 3 days. The cervix was 3 cm. dilated, and the presenting part was breech. Subsequent to hospitalization her temperature rose to 102.8°. Twelve hours after admission the patient spontaneously passed a fetus weighing 245 Gm. with no anomalies and with masculine genitalia. The placenta weighed 115 Gm. and was regular in shape. The attached umbilical cord was inserted centrally, measured 26 cm. and was found to contain 3 vessels on section. Chromosomal analysis from spleen culture was 46 (XY); culture from diaphragmatic fascia revealed 2 different cell lines with 45 XO/46 XY mosaicism. Sex chromatin was negative.

Case 8. A 26-year-old Negro woman, gravida I, Para 0, abortio 0, entered at 13 weeks' gestation, having experienced intermittent colicky pain in the right lower quadrant for 7 days. Culdocentesis yielded blood, and laparotomy confirmed the preoperative diagnosis of ruptured tubal pregnancy. Right salpingectomy was performed. The ampula portion of the right tube was distended in fusiform shape and appeared to be ruptured along one margin. The fusiform shape distention of the tube was 4 by 6 cm. When opened the tube revealed a hematoma beneath the serosal layer. There was a cavity in the center of the hematoma measuring approximately 1.5 cm. in diameter. This was lined by glistening amnionic membrane. No embryonal remnants were observed. An amnion culture was initiated and chromosomal analysis on 71 metaphase spreads showed 26 cells to have a modal count of 46 (XX), but 21 cells had 45 XX-monosomy 18 (and 20 cells were randomly hypoploid). Sex chromatin was positive.

Discussion

During the spring of 1966, 95 abortuses were studied (table 1). The culture success rate in spontaneous abortions was 56 per cent (45 of 80) and in therapeutic abortions 73 per cent (11 of 15). Where fetal cardiac blood or lymphopoietic tissue was stimulated with phytohemagglutinin, the culture success rate was higher (16 of 17).

Cultures were set from multiple tissues when they were available (33 of 56 cases). Diaphragmatic fascia, fetal skin, extremity, and amnion

consistently yielded the most rapidly growing cultures. Success from chorionic tissue was very poor, since the cells failed to attach to the surface of the culture flask. Most failures were caused by necrotic tissue or poorly identified chorionic tissue; bacterial contamination presented little difficulty. Surgery was necessary to obtain 7 of the specimens, with a recognizable fetus retrieved in only 2 of these cases. Intact embryonic

TABLE 1: Summary of Specimens Received

	Spontaneous Abortions	Therapeutic Abortions
Successful cultures . . .	45 of 80 = 56%	11 of 15 = 73%
Single tissues cultured . . .	20	4
Multiple tissues cultured..	25	8
PHA* stimulated cardiac blood cultures...	15	1
PHA* stimulated lymphopoietic tissues (spleen, thymus).....	9	0
Chromosomally abnormal/normal.....	8/45 = 18%	0/23 = 0%
Gestational stage (in wks.)		
5-10	5	5
10-12	13 (2)†	3
12-14	7 (3)	0
14-16	9 (1)	2
16-20	6 (1)	1
20-26	5 (1)	0
Sex ratio male/female..	17/27 + 1(XO)	6/5
Mean parental age		
(maternal).....	24 years (28)	21
(paternal).....	28 years (29)	—

* Phytohemagglutinin
† () Indicates chromosomally abnormal cases.

sacs were obtained in 4 cases and produced successful amnion cultures. Primary cultures were sacrificed as soon as adequate growth was observed (3 to 21 days). In no cases were serial transplants of trypsinized subcultures employed. Few first trimester abortuses were available for study (27 of 45 samples were midtrimester). Where culture growth was successful, 6 of the 8 cases with chromosomal anomalies had been abortions during the midtrimester (table 2). However, in the majority of cases bleeding was encountered early in pregnancy and embryonic arrest was found to be characteristic of early embryopathy. Abnormal chromosomal patterns found were similar to those in other series of this nature,^{10, 12} but 2 polyploids and 2 mosaics were documented. Mosaicism (45 XO/46 XY) between short-term blood cultures (3 days) and fascia cultures (7

days) was seen in case 7. An autosomal mosaic (case 8) was observed in an ectopic pregnancy. A previous gestational history of repeated abortion was found in case 2; however, the anomaly was an error of nondisjunction, and the parents were not demonstrable mosaics. Previous abortions were found in 17 of 45 patients; however, multiple abortions were found in only 4 patients (excluding case 2). The sex complement of the chromosomally abnormal embryos was 4 (XX), 1 (XXX), 1(XO), 1(XO/XY) and 1 (XX/XY).

Exclusion of these 2 cases equalized the parental ages of both groups.

Summary

Eight of 45 spontaneous abortions during the spring of 1966 showed chromosomal anomalies on cultures. No anomalies were present in 11 therapeutic abortions.

The sex ratio of the 56 abortions in which sex chromatin results were compared with karyo-

TABLE 2: Summary of Abnormal Cases in Early Spontaneous Abortion

Maternal			Tissue Received	Tissue Grown	Length of Gestation	History				Chromosomal Number					Diagnosis	Sex Chromatin
Case	Age	Race				Gravida	Para	Abortio	No. Cells Counted	45	45	46	47	47		
1	24	W	Placenta and intact sac; from D and C	Amnion and chorion	12 weeks	2	0	1	31	7	19	2	1	2	45 XO	Negative
2	33	W	Placenta and intact sac; from D and C	Amnion and chorion	14 weeks	5	0	4	42	7	1	1	31	2	47 XX: 17-18 trisomy	Positive
3	42	W	Macerated fetus (50 Gm.) and placenta from D and C	Amnion and chorion	22 weeks	3	1	1	18	3	2	0	13	0	47 XX: 21-22 trisomy	Positive
4	25	W	Placental fragments, from D and C	Chorion	12 weeks	3	2	0	25	-68 9	69 9	70+			XXX triploidy	Positive
5	27	W	Placenta and intact sac	Amnion and chorion	13 weeks	2	1	0	22	-91 4	92 10	92+			XXYY tetraploidy	Unsatisfactory
6	26	W	Placenta and intact sac; from D and C	Amnion	12 weeks	3	2	0	22	3	16	1	2	0	45 XX monosomy 16	Positive
7	23	W	Fetus (245 Gm.) and placenta passed in hospital	Cardiac blood, thymus, spleen, fascia	19 weeks	3	1	1	58	9	29	30	0	0	45 XO/46 XY	Negative
8	26	N	Salpinx and tubal pregnancy from right salpingectomy	Amnion	13 weeks	1	0	0	71	20	21	26	0	4	45 XX: monosomy 18 46 XX	Positive

This preponderance of the female genome was prevalent in euploid embryos—27 (XX) to 15 (XY). In all cases the sex chromatin results were consistent with karyotypic sex.

An interesting correlation to maternal race is suggested by the fact that 22 of the 45 spontaneous abortuses studied were Negro, but only 1 of the 8 genetically abnormal specimens were of this racial group (case 8).

No significant variation in paternal age was found, but due to the increased maternal age factor in trisomics (cases 2 and 3), a pseudo-increase in the abnormal embryos was noted.

typic sex revealed a preponderance of females: 32 to 23 + 1(XO).

The chromosomal aberrations detected were 2 mosaics (XO/XY and monosomy E), 2 trisomics (Group G and Group E), 2 monosomics (XO and monosomy-16), and 2 polyploids (69 XXX and 92 XXYY).

A marked difference in the racial distribution of aneuploid embryos was found.

The embryopathy in all abnormal cases was consistent with early death, although the specimen was obtained surgically at a later period.

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Intravenous Regional Anesthesia*

LORGIO F. ARTEAGA, M.D.,† AND PATRICIA H. RUSSELL, M.D.‡

THE TECHNIQUE of intravenous regional anesthesia was first described by Bier¹ in 1908. Only sporadic reports followed until 1963, when Holmes² presented his modification of the original technique. Since that time numerous studies have been reported of the use of various anesthetic drugs and modifications of Holmes' technique.³⁻⁷ Work reported from the Mt. Alto Veterans Administration Hospital, Washington, D. C. by Adams et al⁸ resulted in our rather early interest and utilization of this procedure.

Simplicity of the procedure, utilization of tourniquet equipment so common in extremity work, and absence of postanesthesia sequelae have made this most valuable to the practicing physician.

The procedure itself results in minimal discomfort to the patient. Outpatients are brought to the operating room unpremedicated. Hospitalized patients may receive 100 mg. of pentobarbital orally 2 hours prior to surgery. The patient lies supine with blood pressure cuff and stethoscope on the uninvolved arm. A double-compartment inflatable tourniquet developed for us by Baum and Company is applied on the operative extremity above the elbow in hand or forearm surgery, and over the calf for foot or ankle surgery. Leg tourniquets require special care in order to avoid compression of the peroneal nerve. With the use of a venous tourniquet a 21-gauge scalp-vein (butterfly) needle with filled syringe attached is introduced into a suitable vein and the needle flushed with 1 ml. of the solution to prevent plugging of the needle and connecting tube by blood. The needle is anchored to the skin with adhesive tape, and the extremity is elevated. An Esmarch bandage is used to exsanguinate the extremity wrapped as tightly as possible from fingers or toes to the tourniquet. First, the distal and then the proximal cuffs are inflated to standard arm or leg pressures of 250 or 500 mm.

Hg respectively. The distal tourniquet is deflated and the inflated proximal tourniquet left. The Esmarch bandage is removed and the local anesthetic drug injected. Lidocaine, 0.5 per cent without epinephrine, is the drug we are using with an average dose of 40 ml. (200 mg.) for the arm and 60 ml. (300 mg.) for the leg. Following injection the needle is withdrawn and pressure applied to the injection site.

On injection the patient experiences tingling of the extremity, followed by warmth, heaviness, and loss of position sense. The skin exhibits mottling, thought to be the result of replacement of blood in the capillaries by the local anesthetic drug alternating with areas where blood is flushed superficially from the more difficult to compress deep vessels.

The 10-minute interval required for adequate anesthesia may be utilized in preparing and draping the extremity. Prior to the surgical incision the distal tourniquet is reinflated overlying an anesthetized area. This avoids the most frequent complaint—pressure at the tourniquet site. Following inflation of the distal tourniquet the proximal tourniquet is deflated. Anesthesia persists as long as the tourniquet remains inflated.

Blood pressure and pulse are observed throughout. Rapport with the patient is maintained as for any surgical procedure with an awake patient. An intravenous infusion may be maintained in the nonoperative arm as a safety measure. In any procedure with local anesthetic drugs certain equipment and drugs should always be at hand. We keep 2.5 per cent thiopental sodium available in each operating room as well as a gas machine to provide oxygen in cases of toxic reaction or to provide supplemental general anesthesia in the case of anesthetic failure. Succinylcholine should be available for the control of muscle spasm interfering with ventilation in case convulsions should occur. Vasopressors should also be available in the operating room.

Upon termination of the surgical procedure the tourniquet is released for 10 to 15 seconds, followed by reinflation for 30 seconds prior to removal of the tourniquet. This results in a more gradual release of the local anesthetic into the general circulation. Sensation returns to the

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† Resident in Anesthesiology, George Washington University Hospital.

‡ Associate Professor of Anesthesiology, George Washington University School of Medicine, 901 23rd Street, N.W., Washington, D. C. 20037.

extremity with the same paresthesias experienced on injection and is normal in 2 to 5 minutes. Release of the tourniquet may produce transient systemic sensations such as numbness of the tongue, dizziness, and ringing of the ears. Vital signs are recorded in the operating room for 10 minutes following removal of the tourniquet.

Lidocaine, 0.5 per cent without epinephrine, has been used for this technique in amounts ranging from 1.5 mg./Kg. to 3 mg./Kg. less than the maximum dosage of 4 mg./Kg. as outlined by Bell et al⁹ and Merrifield and Carter¹⁰ and well below the 5 mg./Kg. dosage found by Foldes et al¹¹ to produce toxicity. The milligram dosage is less than that utilized for direct nerve block.

We have found this to be a safe technique. The following, however, are those conditions which we believe to be relative contraindications to the use of intravenous regional anesthesia: history of convulsive disorder, heart block, peripheral vascular disease precluding the use of the tourniquet, absence of a suitable vein, inability to effect adequate exsanguination, and hepatic insufficiency as evidenced by elevated bromsulfalein retention or jaundice.

Discussion

One hundred and thirty patients ranging in age from 14 to 80 years and with a wide variety of surgical operations have received intravenous regional anesthesia at the George Washington University Hospital during the years 1964 to 1966 with no complications. It is our belief that this technique may be used for almost any operation involving the distal extremities, that is, from elbow or knee to fingers or toes. In case of operations in the knee joint or above the amount of drug has to be larger than the safe dosage, but this may be used in the case of amputations since most of the drug will be removed with the amputated limb. Historically, Bier¹ used 2 tourniquets to isolate a segment of extremity in order to avoid exceeding the safe dosage of the anesthetic drug.

There have been failures in our series, all attributable to technical errors, dislodgment of the needle during wrapping of the extremity, or tourniquet failure. In one case the surgical assistant stepped on the inlet tube of the inflation system, disconnecting the tube from the pressure source 20 minutes after injection. The patient experienced no systemic effect. In view of these experiences our technique has been modified from time to time to eliminate these possible causes of failure. We now use the relatively short

butterfly needles and flush the tubing and needle to avoid plugging with blood. The introduction of a double compartment inflatable tourniquet with bidirectional valve by Kidde now permits the use of a single inflation system.

We have found exsanguination of the limb to be of the utmost importance. When this is not possible because of pain in the proposed operative site the limb should be elevated to the vertical position for at least 5 minutes before inflating the tourniquet. Compression of the brachial or femoral artery during elevation has been suggested to aid in accomplishing exsanguination.¹²

The application of intravenous regional block to outpatient surgery has proved to be most valuable and is suggested as a means of partially alleviating the acute shortage of hospital beds and recovery-room space. These patients may be discharged within 60 to 90 minutes after conclusion of the operation. This technique has also proved extremely useful for emergency surgery or fracture reduction so frequently necessary in patients with recent food ingestion. Should profound muscle relaxation be required, however, we have found the direct nerve blocks preferable.

Prolonged intravenous regional block for as long as 4 hours has been reported with intermittent release of the tourniquet, blood being allowed to come into the arm with re-exsanguination and reinjection of the drug.¹³

The mode of action of intravenous regional block is not clearly understood.¹⁴ It has been postulated that the anesthetic drug reaches the large and small nerves as well as the nerve endings via the venous capillaries and the vasa nervorum, but this point deserves further study.

It is our opinion that intravenous regional anesthesia is a useful, simple, almost innocuous way of anesthetizing the distal limbs. We have found it a sufficiently versatile and fool-proof technique to justify its use by the practicing physician and to be considered in those patients whose physical status or concomitant disease precludes the use of general anesthesia.

Summary

The steps followed in the production of anesthesia by means of local anesthetic drugs injected into the emptied venous system of an extremity isolated by pneumatic tourniquet have been presented. Our experience with 130 patients and resulting impressions have been discussed. We have had no serious side-effects, and our failures have been attributable to equipment problems.

(Continued on page 104)

Nine Neuropathies

HAROLD STEVENS, Ph.D., M.D.*

ANY PERIPHERAL NERVE may be the target of a pathologic process, but certain nerves are more vulnerable by virtue either of their position, length, or inimitable metabolic or nutritional requirements. Nine neuropathies are selected not because this number represents the total of all important neuropathies nor because the number is mystic or meaningful, but merely as an arbitrary sample of neuropathies which exemplify diagnostic and treatment principles. Mononeuropathies, that is, isolated disease, damage, or defect involving a single nerve, receives scant attention in medical schools and are not seen often during internship since hospitalization is rarely required. Further, many of these 9 are frequently misdiagnosed.

Many physicians recoil when confronted with any problem in neuroanatomy, especially a neuropathy, which may invoke painful memories of a hated anatomy course in which the hapless student was forced to memorize the tortured meanderings of the components of the brachial plexus, etc. Actually, relatively limited knowledge or experience is needed to identify the common mononeuropathies. Details regarding the origin and course of nerves is readily available in almost any textbook of neurology. The average physician is not aware that even the most sophisticated neurologist leans heavily on his library.

Some of the common neuropathies are merely the result of local pressure. In these cases, simply preventing or avoiding the cause of the pressure will permit gradual subsidence of symptoms and signs. Other mononeuropathies may present the first evidence of a more generalized systemic disease, such as diabetes, gout, porphyria, or periarteritis nodosa. In some instances the patient may ascribe his condition to his occupation, but the physician may be led to a more deep-seated problem, as in the case of a lateral femoral cutaneous nerve involvement, that may be caused by intra-abdominal or pelvic disorder.¹ In some of the neuropathies a specific etiology cannot be identified, as in many cases of carpal tunnel syndrome.² The following consideration of certain common mononeuropathies is not an exhaustive

review of the subject. There are other important and interesting conditions involving single nerves.³ The cases to be cited were encountered in the course of a private office practice of medical neurology, serving essentially a nonindustrial clientele in Washington, D. C. In some of the cases an occupational origin was identified. None of the patients required hospitalization.

Cranial Nerves

Individual cranial nerves are frequently affected by a variety of etiologic mechanisms, including diabetes, which may cause among other phenomena impairment of the oculomotor nerves on one side or on both. One of the commonest is seventh nerve neuropathy usually resulting in Bell's palsy, i.e., idiopathic unilateral seventh nerve paralysis. It is often misdiagnosed "stroke" because of the relatively sudden onset of complete facial paralysis. In addition to the history the diagnosis is made by the inability of the patient to close the eye, retract the corner of the mouth, or to wrinkle the forehead on the affected side. Epiphora and dysgeusia are common accompaniments, especially the former. Although the nerve is predominantly motor, pain back of the ear is frequently present early and is often severe but usually rapidly and spontaneously improves. The neurologic examination should reveal no evidence of objective nor subjective sensory involvement of the eighth nerve, nor of any other cranial nerve.

Although Bell's palsy is common and easily diagnosed, a complete neurologic examination is mandatory since seventh nerve palsy is not always idiopathic. It may be the first manifestation of multiple sclerosis, acoustic neuroma, petrositis, sarcoidosis, Melkersson's syndrome,⁴ etc. X-ray films of the skull including the petrous ridges should be ordered. If the neurologic examination is negative other than the above, no further diagnostic measures are needed. Elaborate electrical tests are not necessary, nor is even a spinal fluid examination required. The treatment is simple. The patient is instructed to massage his face upward for 10 minutes 3 times a day. An eye patch is worn at night. Follow-up examinations are essential.

* Professor of Neurology, George Washington University School of Medicine, 901 23rd Street, N.W., Washington, D. C. 20037.

Radical treatment is unnecessary, often unsafe, and should be condemned. This warning is necessary since a school of aggressive therapists has promulgated a "new therapy" which "employs stellate ganglion block, parenteral nicotinic acid, and administration of corticosteroids at the earliest possible moment; if this does not bring quick improvement, anticoagulant and fibrinolytic agents may be used. In the few cases in which these medical measures fail, surgical decompression of the facial nerve should be recommended." This opinion quotes an authority who recommends removal of the vertical portion of the facial canal, in some cases 3 or 4 weeks after the onset of paralysis. These horrendous, so-called unroofing operations, designed to expose the facial nerve, should be relabeled "unnerving operations." This vigorous therapeutic attack could leave a trail of iatrogenic cripples. The only emergency in the treatment is that if the physician does not hurry with his treatment the patient is liable to recover spontaneously.⁵ *Primum non nocere!*

The prognosis is excellent, more than 90 per cent recovering with little or no sequelae.

Fifth Nerve

In contrast to Bell's palsy, the commonest affliction of the fifth nerve, *tic douloureux*, has been treated with new and relatively safe measures which hold promise in some cases for mitigating this distressing syndrome which is characterized by very brief, explosive attacks of pain, usually in older people, radiating in the distribution of one of the 3 divisions of the fifth nerve. Trigger zones, i.e., limited areas which if stimulated can produce a typical attack, further identify this affliction. The diagnosis is easy with the emphasis on the history, since the neurologic examination is completely negative between attacks. A careful history will disclose that the pain radiates in a constant stereotyped limited area which conforms to the distribution of one of the divisions of the fifth nerve. Extension beyond these areas should make the diagnosis suspect and would imply the diagnosis of "atypical facial neuralgia." In this condition, in addition to nonconformity to the anatomic distribution of the fifth nerve, the attacks last longer, there are no trigger zones, and often there is suggestive evidence of a psychogenic etiology. Atypical neuralgia is uniquely unresponsive to therapy.

In recent years Dilantin® has proved effective in some instances, but fairly high doses are necessary, that is, up to 5 to 6 capsules of 0.1 Gm. a

day. More recently, carbamazapine has been successfully employed.⁶ According to Amols,⁷ 80 per cent of his patients were significantly helped and in most there was complete elimination of pain permitting them to once again brush their teeth, eat solid foods, etc. In most cases benefits were lasting as long as the carbamazapine was taken in the appropriate dosage. Side-effects were encountered including dizziness, ataxia, and nausea. A few patients developed rashes which forced discontinuation of the drug. There was a marked reduction in the number of patients requiring surgical treatment. The latter consists of a tractotomy or section of the pain fibers passing to the face in the medulla or other surgical approaches. Usually this final therapeutic measure is resorted to after medication and injections with Novocain® and with alcohol have failed.

Median Nerve

Causalgia. The median nerve, like most nerves, is mixed, that is, is both motor and sensory. It also carries a large autonomic component and, as a consequence, injury or disease of the median nerve eventuates more frequently in *causalgia* than with disease of any other nerve. *Causalgia*, a very unpleasant burning tingling pain, usually located in the palm of the hand, may be severe and constant with superimposed paroxysms of intense pain which may occur spontaneously or be precipitated by movement, light touch, cold, or often emotion. A psychogenic etiology is frequently misconstrued, especially in instances of trauma which may have preceded the onset by several weeks and may be associated with medico-legal controversy. Neurologic examination discloses hyperesthesia and a variety of trophic changes including a very moist or very dry red or purple shiny skin. Slight atrophy of the muscles and contractures may be present (figure 1). X-ray examination may disclose Sudeck's atrophy of bone.



FIG. 1. Appearance of hand in *causalgia* due to median neuropathy.

Medication is usually ineffectual, and narcotic dependency is a frequent consequence. Some cases resolve spontaneously, and many are benefited by sympathetic block.

Carpal tunnel syndrome. Hypalgesia may be found also in this syndrome but is usually mild and limited to the base of the thumb and index finger. This syndrome is the commonest affliction of the median nerve and is due to compression of nerve at the wrist by the transverse carpal ligament. Forced flexion of the wrist may precipitate or aggravate the pain. Tinel's sign is sometimes positive; i.e., when the examiner taps the palmar surface of the base of the thumb, the patient feels a tingling or pins-and-needle sensation in the distal distribution of the nerve.

In many cases subjective and objective sensory changes are absent, and only motor involvement is present. There is partial atrophy of the thenar eminence and often of the first lumbricales with weakness in approximating the thumb and little finger, so that the examiner can easily draw his finger between the two (figures 2 and 3). Signs and



FIG. 2. Marked atrophy of first lumbricales in left hand due to carpal tunnel syndrome.

symptoms are usually limited to the wrist and below. Occasionally pain may radiate to the elbow, but weakness or sensory changes above the wrist suggest another explanation, such as cervical cord tumor, cervical disc dislocation, thoracic outlet syndrome, syringomyelia, or shoulder-hand syndrome.

The condition is usually, but not always, unilateral. X-ray films of the carpal bones are usually negative. Electromyography has been recommended to confirm the diagnosis⁸ but in my experience it is rarely needed. The incidence is highest in the fifth and sixth decade, and it is more common in women.⁹

The etiology is usually unknown. In the cases studied in my office trauma played no role, and



FIG. 3. Partial thenar atrophy of right hand typical of mild carpal tunnel syndrome.

there was no convincing evidence of occupational origin except in the following case:

A 46-year-old psychiatrist habitually supported his chin on the palm of his left hand with the wrist hyperextended for prolonged periods during psychotherapy sessions, thus compressing the median nerve at the wrist by inadvertently performing a sustained Phalen's maneuver. Pain and paresthesia were induced in the area outlined in figure 4. The symptoms gradually and completely subsided after he relinquished the posture of "the thinker."

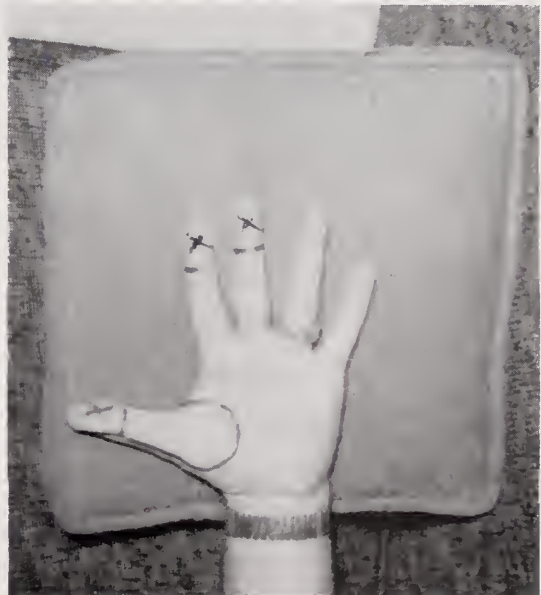


FIG. 4. Pattern of sensory involvement in median neuropathy often associated with carpal tunnel syndrome.

Rheumatoid arthritis has been blamed for median neuropathy but is usually not the cause. Primary or secondary amyloidosis has been associated with the syndrome, as have been neuroma, granulomatous infections, hematologic disease,

etc.^{10, 11, 12} In a case of gout reported by Ward and others¹³ the median nerve was compressed by large urate deposits in and about the carpal tunnel of both wrists. Alajouanine¹⁴ described a congenital anomaly of the wrist that caused this syndrome. Schiller and Kolb¹⁵ reported 3 cases with acromegaly and 1 with myxedema. They believe that an endocrine disorder is the most plausible explanation because the incidence of the syndrome is high in postmenopausal women, and they recommend estrogen therapy in the early stages. Reid¹⁶ also found estrogen therapy effective. If the median nerve is compressed by an accumulation of myxedematous tissue at the wrist thyroxine can be effective (figure 5). Local injec-

pressure on the nerve against the humerus. Alcoholism as a cause, as implied in the popular phrase, "Saturday night palsy," has been overemphasized. Unilateral radial nerve palsy occurs in non-alcoholic patients as well. The following is an example of a "sleep palsy," i.e., a mononeuritis produced by sustained pressure on a nerve during sleep or coma:

An abstemious, healthy, overworked typist of 28 took a sedative before retiring, slept soundly with her head resting on the medial surface of her left arm, and awakened with complete wristdrop which lasted 3 weeks. A light-weight cock-up splint was the only prescribed measure.



FIG. 5. Carpal tunnel syndrome associated with myxedema due to hyperplasia of soft tissue compressing median nerve at the wrist.

tion of steroid will sometimes cure the condition. If none of these approaches to treatment is appropriate or effective, the transverse carpal ligament can be sectioned to relieve the compression of the nerve.^{17, 18, 19}

Among the lesions to be considered above the wrist is a compressive neuropathy of the median nerve near the elbow, called the pronator syndrome. This has been attributed to hypertrophy of the pronator teres muscle through which the median nerve passes, or to compression by local fibrous bands. The latter was found to be the cause in a pianist with median palsy described by Kopell.²⁰ In that instance, percussion in the antecubital fossa produced the tingling sensation of a positive Tinel's sign, and surgical release of the bands cured the condition.

Radial Nerve

Affection of the radial nerve is the most common of all peripheral nerve lesions according to Wechsler.²¹ It is frequently caused by prolonged

A similar compressive neuropathy, called "bridegroom palsy," results in radial nerve paralysis with wristdrop when the happy but tired bride sleeps with her head on her mate's arm during the honeymoon night (paralysis des amants). Mononeuritis following surgery is usually due to prolonged immobilization and compression of the peripheral nerve, or it may be the result of traction on the nerve during surgery. Inflamed bursae, lipomas, and other tumors may also produce a mononeuropathy.²²

Radial nerve paralysis can also be caused by sudden vigorous contraction of the triceps muscle, as in throwing a stone, pulling on a pair of tight boots, grasping a support to avoid falling, and the like.²³

An athletic, 16-year-old errand boy slipped on the stairs, grasped the bannister to avoid falling, and suffered immediate and complete radial nerve paralysis. No direct blow to the arm had occurred, but a small tender discoloration appeared on the lower third of the medial surface of the arm. It took 3 months for

return of complete function. No specific therapy was required.

As in all neurologic diseases, a diagnosis of radial palsy requires an accurate history. Physical examination discloses more or less complete paralysis of the muscles that extend the wrist. The triceps muscle is not affected in the usual case in which the radial nerve is compressed against the humerus. Conversion hysteria, a common disorder,²⁴ may mimic any organic paralysis. In true radial nerve palsy the fingers are held in flexion, but in hysteria the fingers are extended. There is usually little sensory impairment involving the radial side and proximal aspects of the first, second and third fingers. As in most mononeuropathies, treatment of radial nerve palsy is conservative and simple, consisting merely of a light-weight, plastic, cock-up splint worn during the day.

Ulnar Nerve

Unlike the spontaneous onset and the varied and often unknown etiology of the carpal tunnel syndrome involving the median nerve, ulnar neuropathy usually follows a direct and immediately precedent episode of local nerve compression. Sleeping with the head resting on the hand with the elbow pressed against a hard surface or prolonged viewing of television with the elbows resting on the arms of the chair can produce ulnar palsy.²⁵ Usually ulnar neuropathy occurs with direct pressure at the elbow, but falling forward on the hands or forceful flexion of the elbows may cause ulnar palsy in one or both arms, perhaps by overstretching the nerve or tearing the epineurial vessels.²⁶ Diabetes or gout may be the cause.

Merritt²⁷ stated that complete lesions of the ulnar nerve produce weakness of flexion and adduction of the wrist and flexion of the ring and little fingers, paralysis of abduction and apposition of the little finger, paralysis of adduction of the thumb, and paralysis of adduction and abduction of the fingers. There is atrophy of the hypothenar muscles and of the interossei. The latter is most obvious on the dorsal surface of the hand between the thumb and index fingers; Froment's sign is positive (figure 6). Sensory loss is greatest in the little finger and to a lesser degree on the inner side of the ring finger.

Tardy ulnar palsy is an important syndrome, involving the ulnar nerve at the elbow. In this condition progressive weakness and sensory changes in the motor and sensory distribution of the ulnar nerve develop many years after a frac-

ture or other injury to the elbow. Joint deformity may stretch the ulnar nerve at the elbow, or the nerve may be involved in callus formation, so that freeing the nerve and transplanting it forward can relieve the condition. However, according to Feindel and Stratford²⁸ there may be no significant joint deformity. If the nerve bed is not grossly scarred or the joint deformed they recommend dividing the aponeurosis rather than transplanting the nerve. Neuromas may mimic this syndrome.²⁹



FIG. 6. Flexion of terminal phalanx in attempt to grasp tongue blade typical of ulnar neuropathy (Froment's sign).

An uncommon ulnar neuropathy at the wrist is that due to aneurysm of the ulnar artery.³⁰ This may be idiopathic, mycotic, or traumatic. It may be due to the patient's occupation. Trophic changes in the little finger, rupture of the aneurysm, and neurologic changes have been reported. Preoperative arteriography is recommended.

An interesting and often overlooked form of ulnar neuropathy is the isolated involvement of the deep palmar branch of the ulnar nerve at the wrist.³¹ Unlike the more proximal lesions of the ulnar nerve, there is no sensory involvement in this neuropathy because the deep palmar branch is purely motor. It leaves the main trunk on the outer side of the pisiform bone to innervate the abductor digiti quinti, opponens digiti quinti, flexor digiti quinti brevis, the third and fourth

lumbricales, the interossei, the adductor of the thumb, and the medial head of the flexor pollicis brevis. This is usually an occupational neuropathy. It may occur after seemingly trivial pressure applied near the pisiform bone, e.g., after sustained grasping of the handlebars of a motorcycle.³² Magee³³ found it in a desk worker who pressed down firmly with his left hand on multiple carbon copies, while he wrote with his right hand. In another case of a woman who fed her palsied child with a spoon braced tightly against the hypothenar eminence, the interossei and adductor pollicis became weak.

A 48-year-old right-handed waiter was referred for neurologic consultation because his family physician had diagnosed a "stroke." Examination showed only weakness of the interossei and other muscles supplied by the deep palmar branch of the ulnar nerve in the right hand. The weakness of the interossei was demonstrated when he was told to form a peak with the tips of his fingers. He was unable to abduct or adduct the fingers, and there was flabbiness of the hypothenar eminence. There was no sensory impairment. He regularly carried his loaded tray in this right hand with the under surface supported by the thenar and hypothenar eminences. This flattened the latter and compressed the deep palmar branch of the ulnar nerve against the pisiform bone with resultant typical palsy. This was a true occupational neuropathy. The symptoms subsided completely in 5 weeks merely by avoiding this manner of carrying the tray.

A similar neuropathy was observed in a 50-year-old bus driver who developed sudden weakness in his left hand noted when he tried to manipulate the change holder. This appeared 2 days after he had leaned his entire 200 lb. weight on his outstretched palm while scraping and painting his slightly pitched roof (figure 7).

Long Thoracic Nerve

This nerve arises from the fifth, sixth and seventh cervical roots. It is not a mixed nerve but is purely motor, innervating the serratus magnus muscle. Because of its position and its long course, it is often affected, usually from lesions in the neck. According to Gowers²³ this neuropathy usually occurs on the right side and chiefly in muscular workers between 25 and 40 years of age. It may be caused by carrying objects on the shoulder or by sustained extension of the arm. The diagnosis is simple. There is winging of the scapula made prominent by having the patient stand, facing a wall, and pushing against it with his outstretched hand. The arm cannot be raised above the horizontal plane.



FIG. 7. Froment's sign associated with complete paralysis of interossei due to compression of the ulnar deep palmar branch.

A 38-year-old government clerk carried a heavy stack of Congressional Records on his shoulder while riding on an elevator which stopped suddenly thrusting the weight downward, forcibly depressing the shoulder (figure 8). Recovery was incomplete.



FIG. 8. Winging of scapula due to traumatic neuropathy of long thoracic nerve.

A similar occupational mononeuropathy has been described in plasterers, electricians, carpenters, etc., whose work may require maintaining a certain posture, especially with the arm extended. Skillern³⁴ cites a case in a machinist who had to reach fully forward more than 800 times a day. Sleeping on the abducted arm and rolling about in sleep were considered to be the cause by Potts.³⁵

In another patient, in bed with a miscarriage, frequent lifting of herself on her right arm produced the serratus magnus palsy. Husking corn, playing tennis, and golf also have been considered to be causes.³⁶ The condition may arise from enlarged lymph nodes, from inflamed subcoracoid or subscapular bursae, or after measles, pneumonia, typhoid fever, diphtheria, influenza and bronchopneumonia.³⁷

As with other mononeuritis, the long thoracic nerve involvement may reflect systemic disease. Serum sickness is occasionally associated with neuritis, especially of the long thoracic nerve, alone or in combination with other peripheral nerves.

Involvement of the long thoracic nerve may be bilateral. Wartenberg³⁷ reported: "Of all the cases of symmetrical mononeuritis reported, the most common is that of *nervus thoracalis longus*. In incipient mild cases the diagnosis may be difficult, and so the diagnosis of the referring doctor included male climacterium, anxiety neurosis, multiple sclerosis, degenerative diseases of the spinal cord, polio, and muscular dystrophy."

Conservative treatment, including physiotherapy, is indicated. In those cases due to serum sickness, steroid therapy has been found effective.³⁸

Peroneal Nerve

Isolated paralysis of the common peroneal nerve is common.^{3,39} It produces footdrop and talipes equinovarus with paralysis of dorsiflexion of the ankle and the great toe. The patient can stand on the toes of the affected foot but not on the heel. There is steppage gait on the affected side, but the reflexes are normal. Often, but not always, there is hypalgesia and numbness at the base of the great toe extending over the dorsum of the foot (figure 9).

This usually occurs in patients who have lost weight. When the legs are crossed the unpadded patella of the left leg digs into the common peroneal nerve near the head of the fibula of the crossed right leg. Right-handed people commonly cross the right over the left leg. This may be an occupational neuropathy.

A 50-year-old obese psychoanalyst compulsively followed his doctor's instructions to reduce. In 6 weeks he lost 40 lbs. After 4 uninterrupted 1-hour sessions with his patients, with his notebook in hand, he rose from his chair, lurched forward, and discovered that his right foot was paralyzed. His mistaken self-diagnosis of a "stroke" was corrected after he described his symptoms on the phone to a neurological colleague.

Common peroneal neuropathy inferred from the phone conversation was confirmed later that day by a neurologic examination. He lost no time from work and recovered completely after 6 weeks of refraining from crossing his legs.

This case typifies the clinical syndrome and course; it also reflects the common misdiagnosis of "stroke." The right-sided involvement confirms the tendency of right-handed people to cross the right leg over the left.



FIG. 9. Area of sensory loss in deep peroneal nerve dysfunction, usually accompanied by foot-drop.

Femoral Nerve

Less common and poorly understood is femoral neuropathy. The femoral nerve is a motor nerve for the quadriceps muscle and a sensory nerve for the anterior and inner aspects of the thigh and leg. The picture is fairly stereotyped. It usually appears suddenly with buckling of the knee due to quadriceps paralysis. Later comes atrophy of the muscle. There is weakness of extension of the leg and of flexion of the thigh. The patellar reflex is lost. Pain, paresthesia, and hypalgesia occur in the cutaneous distribution of the nerve.

Femoral neuropathy may be a sign of serious systemic disease, including hemophilia and other hemorrhagic diatheses. Anticoagulants and peri-

arteritis nodosa have been identified as causes by Calverley and Mulder.⁴⁰ They reported that 14 of 19 patients had diabetes. Woltman^{41, 42} also found that the majority of cases were due to diabetes. One case of isolated neuritis of both femoral nerves in pentosuria has been reported.⁴³ Abdominal and pelvic surgery and parturition can produce this condition.^{44, 45, 46} Some cases are unexplained. As in other mononeuritis, an underlying primary disease should always be considered.

A 22-year-old man suffered almost constant pain in the right thigh and leg, particularly in the medial surface. Neurologic examination disclosed hypalgesia in the distribution of the femoral nerve. The patellar reflex was diminished, and there was weakness and atrophy of the quadriceps muscle. A myelogram was negative. Aspirin provided partial, temporary relief. The neuropathy was caused by an osteoid osteoma. Surgical removal of the osteoma resolved all the neurologic manifestations.

Lateral Femoral Cutaneous Nerve

Meralgia paresthetica is a common syndrome consisting of pain, numbness, itching, or other dysesthesia occurring in an elliptical patch over the anterolateral aspect of the thigh in the cutaneous distribution of the lateral femoral cutaneous nerve (figure 10). Perception of pin prick

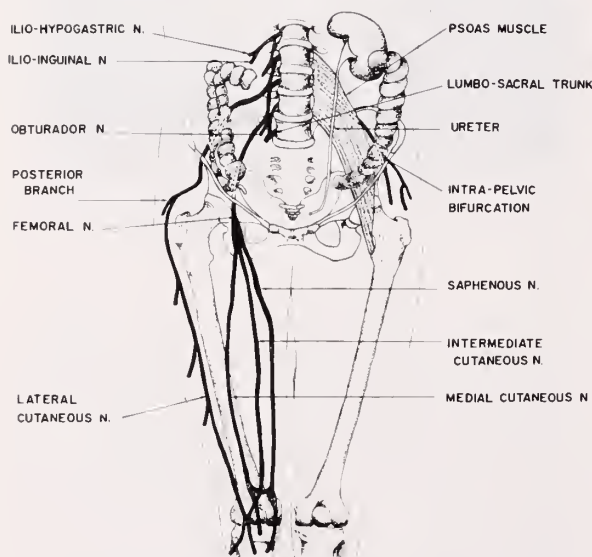


FIG. 10. The long course of the lateral cutaneous nerve within the abdomen renders it vulnerable to intra-abdominal disease.

and touch is often diminished or lost in this area (figure 11). There is no motor disturbance since the nerve is entirely sensory.

For some reason physicians are frequently affected. This common condition can occur through a wide range of ages. It is almost always benign, rarely the result of serious, underlying disease. However, a careful neurologic and often intensive physical examination are required to rule out underlying causes, particularly intra-abdominal disease. Meralgia paresthetica may not be idiopathic or benign if the area of objective or subjective sensory defect exceeds the well-circumscribed area of distribution of the lateral femoral cutaneous nerve, if other neurologic signs and symptoms are also present, or if there is a history of abdominal or pelvic disease.¹

Treatment usually consists of reassuring the patient of the benign nature of this mononeuritis and advising against surgery.



FIG. 11. Pattern of sensory involvement in meralgia paresthetica.

Summary

Nine neuropathies, paradigmatic of the pathogenesis in most other neuropathies, have been presented. A mononeuropathy may be the first and isolated manifestation of systemic disease. Only rudimentary knowledge of anatomy is needed to recognize and treat these syndromes, several of which are common but are often misdiagnosed. Treatment principles have been discussed.

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Chromosomes in Spontaneous Abortion—Ahu et al

(Continued from page 86)

When last menstrual dates were used a higher incidence of chromosomally abnormal abortions was observed in this Caucasian population (Washington, D. C.) for the conceptual months of December and January.

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Drug Abuse and Abusers*

RAYMOND A. OSBOURN, M.D.†

THE TERM "drug abuse" is applied to the habitual introduction into the human body of a drug or druglike substance to produce a physiologic or psychologic effect when that effect is not needed for the treatment of disease.

Drug abuse probably antedates man's recorded history. While authentic records of opium addiction date from the beginning of the 16th century, it is most probable it began long before that time. The use of opium as a pain reliever was known even before the days of Hippocrates, and it is more than likely that its abuse preceded its medicinal use.

Marihuana usage has been recorded in Chinese literature as far back as 2,000 years before Christ, and it was reported to have been introduced into India about 800 B.C. For untold centuries coca leaves have been chewed by South American Indians for psychic stimulation and to relieve fatigue, and for a century or more Indians of our Southwest have used peyote, a cactus part, for hallucinogenic effects in their religious services.

Recently a new and dramatic group of drugs has been introduced to drug abusers, the hallucinogens. The most important drug in this group is the widely publicized LSD, a synthetic drug so powerful that only 25 micrograms (about one 30-millionth part of an ounce) is capable of producing a profound physiologic effect. At the alleged street price of \$1.00 per 25 micrograms it would be the most expensive substance, weight for weight, known in the world today. A milligram of radium sells for approximately \$20, whereas 1 mg. of LSD would sell for \$40. Compare this with morphine, which in illicit trade sells at 40 cents a milligram.

Today we are also faced with the abuse of several of the ordinary less dramatic drugs of everyday medical practice. The illicit use of these drugs is ever on the increase, and their use, particularly by adolescents, has become alarming. In a recent survey of my own medical practice I asked my own patients who were in high school or college as to what they knew about drug abuse.

More than half knew that some of these drugs were being taken by their fellow students. One said she knew one student who sold "goof balls." About the same number of such persons knew that marihuana was being smoked by one or more of their friends. One of my young male patients (without being asked anything about drugs) noticed my license to dispense opiates and marihuana and asked me to "fix him a pot." You can guess my reply.

The common medicinal drugs so abused fit into 3 main categories: (1) the sedatives (barbiturates), (2) the stimulants (amphetamines), and (3) the tranquilizers.

The barbiturates (commonly called "goof balls") chiefly used are (1) Amytal sodium®, in the language of the street called "Blue Heaven" or "Bluebirds," (2) Tuinal®, called "Tuies" or "Rainbows," (3) Nembutal®, called "Nemmies" or "Yellow Jackets," (4) Seconal®, called "Redbirds" or "Pinks," and (5) Luminal®, called "Purple Hearts." As is well known, these drugs in small doses relax tensions and in larger doses promote sleep. For the illicit user, at first they produce relaxation, but on continued use tolerance and habituation develop. Tolerance means that a larger dose is required to produce the desired effect, and habituation means that the person becomes desirous of taking the drug continually. This is a psychical dependence on the drug. Continued barbiturate usage, however, can lead to true addiction, i.e., physical dependence. Here the subject needs the daily dosage of his drug or he cannot function even at his already compromised level—he is "hooked."

The barbiturate addict develops irritability, often loud talking, shows rapidly changing moods, and is quarrelsome. Finally, his intellectual capacity is compromised; he cannot concentrate, he cannot make good judgments, and he may even develop slurred speech, a tremor, and a staggering gait. Finally, mental depression and suicide may occur.

If he cannot get his drug he may develop withdrawal symptoms. These include restlessness, anxiety, more irritability, nausea, vague pains, delirium, and in severe cases even coma and death.

The amphetamines (commonly called "Pep

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† Clinical Associate Professor of Medicine, Georgetown University School of Medicine; office: 1835 Eye Street, N.W., Washington, D. C. 20006.

Pills") chiefly used are (1) Benzedrine®, called "Bennies" or "Bambitos," (2) Dexedrine®, called "Dexis" or "Co-pilots," (3) Biphetamine®, called "Footballs," and (4) methamphetamine, called "Speed," as well as Dexamyl®, a combination of Dexedrine and barbiturate.

In proper usage these drugs overcome fatigue, overcome sleep, produce a mild state of well-being, and may permit that extra bit of physical exertion required in an acute stressful situation. They are also used in weight control and in certain psychiatric conditions.

But what do these drugs do for the habitués? Early they produce euphoria, increased alertness, quick thinking, and increased ability to concentrate. Then as time goes on and the dosage is increased symptoms similar to those of the barbiturate-abuser develop. The subject becomes irritable, loud, agitated, cannot sleep, develops tremors, may have delusions of persecution, and may even become psychotic.

While it is often stated that these drugs do not produce true physical dependence, only psychic habituation, there is more recent evidence that true addiction can occur. And this means then that deprivation of the drug can result in withdrawal symptoms.

The tranquilizers are a group of drugs that relieve tension and anxiety. There are 6 in common use that are capable of producing habituation and even addiction. These are (1) Meproamate®, known also as Equanil® or Miltown®, (2) Doriden®, (3) Librium®, (4) Noludar®, (5) Placidyl®, and (6) Valmid®. True addiction to these drugs is not very common, but habituation (psychical dependence) is occurring with increasing frequency. Abuse of these drugs produces symptoms like those listed for barbiturates. Similarly, withdrawal symptoms have been reported and have sometimes resulted in death.

Next, one might ask, who are the people who abuse these drugs? This type of drug abuse extends from the adolescents to people past middle age, and from the lowest income groups to the wealthy. One might generalize and say that women prefer barbiturates, adolescents prefer amphetamines, and the middle-aged, particularly those of the upper class of society, prefer tranquilizers.

But how does a person get into the habit of taking a drug he does not need to treat disease? There are many ways. Some acquire abuse by continuing to take a drug legitimately prescribed after the disease has gone. For example, I still remember from my early days of general medical

practice a patient who told me he was on his ninth bottle of Cheracol® even though his cough had stopped after taking the first bottle.

Young users often start as a result of a dare. They do not want to be called "chicken," so they take the offered drug. Most often this only results in a single dose, but in some persons it is the beginning of a habit. Others start drugs for "kicks"; they feel they are going to get an extra thrill or perhaps somehow gain "status." Probably the most frequent method, and certainly the most alarming, is from the friendly persuasion of an acquaintance who happens to be a drug abuser.

Next, one might ask why a person wants to take drugs he does not need. The answer is not simple. It is bound up with the personality structure and emotional make-up of the individual. Undoubtedly some are psychopathic personalities—the perennial bad boys, those who look for trouble and always manage to find it. Others, while not true psychopaths, are immature, unsure, and unstable individuals. They are not well adjusted to the world about them. They find the world too difficult, too cruel, too frustrating. In short, they just cannot cope with it.

To avoid this conflict such a person seeks to escape behind the "drug curtain." Initially it is an easy out, but as he continues to live behind that "curtain" the price goes higher and higher. When basic bodily functions are interfered with, and when even the mind and mental processes are compromised the person becomes ineffectual. He has trouble maintaining gainful employment, he loses his friends, he alienates his family, and he travels at a variable rate of speed down the ladder of depression, often to suicide or even to accidental overdose and death. Is a prolonged stay behind the "drug curtain" worth it?

What then can we as physicians and citizens interested in the welfare of our community and the well-being of all our citizens do to tear down this "drug curtain" or prevent people from going behind it? First, we must know about drug abuse, since it is "with us." We should have some idea of what drugs are abused, who abuses them, and why they do it. We ought to know what is meant by dependence on a drug, both physical and psychical, and we should remember some of the harmful effects of prolonged drug usage. With such knowledge we can impart good information to others who need it, particularly to our young people who, all too often, get the wrong information from poorly informed persons. Often these informants are drug takers themselves and wish

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Goodpasture's Syndrome

A Report of Two Cases with Pathological Findings

ELSA P. A. deFERRERO, M.D.,* BARRINGTON B. BARNES, M.D.,† ED B. CHUNG, M.D., Ph.D.,‡
AND ROBERT L. HACKNEY, M.D.§

SINCE THE ORIGINAL DESCRIPTION of pulmonary hemorrhage associated with glomerulonephritis in 1919 by Goodpasture,¹ 100 or more cases have been reported. The presence of pulmonary hemorrhage and glomerulonephritis in adults without evidence of polyarteritis, idiopathic pulmonary hemosiderosis, or other systemic disease is rare as evidenced by the rather limited number of published cases. Goodpasture's syndrome is described as a progressive, fatal disease, most commonly found in young adult males, and is manifested by pulmonary infiltration, hemoptysis, and signs of renal involvement. Review of the literature demonstrated its world-wide distribution with cases reported in the United States, England, Spain, Germany, New Zealand, Norway, Chile, etc.²⁻²¹ In 1963 Lundberg²² reviewed 31 cases. In the last 3 years more than 70 additional cases have been reported.

Of all the published cases only 1 patient was stated to be a Negro. In this paper we present 2 cases of Goodpasture's syndrome in Negroes.

Case 1. K. L. M. was a 57-year-old Negro woman admitted to Freedmen's Hospital on April 5, 1965 with the chief complaint of shortness of breath of 3 days' duration. Her history went back to January 1965, when she had cough and hemoptysis. She did well thereafter until March 15, 1965, when these symptoms recurred. At this time she had a blood pressure of 230/140 mm. Hg, hematocrit 29 per cent, blood urea nitrogen 35 mg., and albuminuria 4+. Hospitalization was refused and she was placed on reserpine, Esidrex-K®, phenobarbital, antacids, and antinauseants. A chest X-ray film (figure 1) revealed a questionable infiltration at both lung bases. She failed to return for a reading of the P.P.D. but stated that there was no induration. By the end of March

1965 she had developed epigastric pain, nausea, vomiting, anorexia, and a 10-pound weight loss. On April 3 she developed shortness of breath and a cough productive of blood-streaked mucus. She again refused hospitalization. On April 5, 1965 she became severely dyspneic and was hospitalized. The history



FIG. 1. Case 1. Minimal infiltration at both bases, March 15, 1965.

revealed that she had been anemic since the age of 20. She was allergic to penicillin. She was a well developed female in severe respiratory distress. The temperature was 98.6°F, the pulse rate 108 per minute, the respiratory rate 40 per minute, and the blood pressure 155/85 mm. Hg. She was very pale. There was dullness at the right base with rales and bronchial breathing in the same area and in the anterior fourth intercostal space. The heart was not enlarged. The rhythm was regular, the heart rate was 108, and no murmurs were heard. Abdominal and neurologic examinations were negative. Clubbing and cyanosis were not seen. There was a trace of pretibial edema. The white blood cell count was 17,650, the hematocrit 15 per cent, the hemoglobin 4.4 Gm.; the serum iron was 129.2 micrograms; blood urea nitrogen 130 mg.;

* Instructor in Pulmonary Diseases, Howard University College of Medicine, Washington, D. C. 20001.

† Instructor in Pulmonary Diseases, Howard University College of Medicine, Washington, D. C. 20001. (Reprint requests to Dr. Barnes.)

‡ Associate Professor of Pathology, Howard University College of Medicine.

§ Chief, Division of Pulmonary Diseases, Freedmen's Hospital, Washington, D. C. 20001.

potassium 5.4 mEq. per liter; sodium 135 mEq. per liter; chlorides 105 mEq. per liter; total proteins 6.21 Gm. per 100 ml.; albumin 3.8 Gm. and globulin 2.37 Gm. per 100 ml. The urine was straw-colored and cloudy; the specific gravity was 1.010, the pH 4.5, albumin 3+, and sugar negative; the microscopic examination showed many white blood cells per high-power field and few bacteria. Chest X-ray films revealed a diffuse bilateral infiltration involving the lower two-thirds of the lung fields (figure 2). On the night of admission the patient was extremely short of breath. Early the next morning while being prepared for a bone marrow biopsy she became extremely dyspneic and died.



FIG. 2. Case 1. Diffuse bilateral infiltration, scattered throughout both lung fields, April 5, 1965.

The significant findings at autopsy were in the lungs and the kidneys. Both lungs were extremely heavy; the right weighed 1,150 Gm., and the left 900 Gm. The surfaces were purple to dark red and mottled; the cut surface was nodular in some areas, while in others it was somewhat meaty in consistency. The pleural cavities contained no fluid. The right kidney weighed 160 Gm. and the left 165 Gm. The capsules stripped with ease; the surfaces were pale and relatively smooth. The cut sections revealed thickening of the cortex, focal blurring of the corticomedullary junction, and rather diffuse pallor of the renal parenchyma. The other organs were grossly not remarkable except that the heart was slightly enlarged and weighed 400 Gm. There was dilatation of the right auricle and ventricle, together with mild arteriosclerosis of the pulmonary arteries.

Microscopically sections of the lungs showed scat-

tered foci of hemorrhage. In some places groups of alveoli were packed with erythrocytes and hemosiderin-laden macrophages. In other areas they contained aggregates of pneumocytes, many of which were laden with blood-pigmented granules. In some areas the alveolar septa were considerably thickened, focally fibrosed, and mildly infiltrated with mononuclear cells. Occasionally deposits of hemosiderin were noted in the thickened alveolar walls. A few of the alveoli contained organized fibrin clots (figure 3).

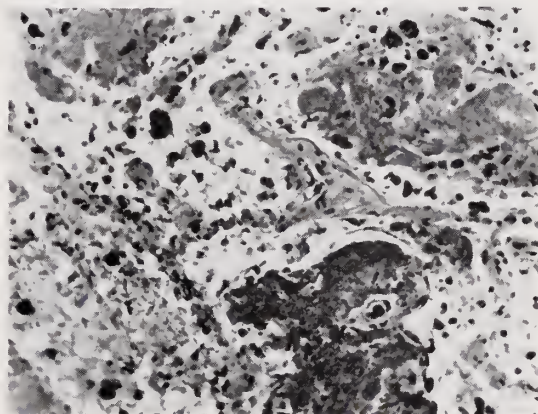


FIG. 3. Case 1. Organized fibrin clots in the alveoli and many free erythrocytes and hemosiderin-laden macrophages. Occasional drumstick projections of alveolar walls which are considerably thickened and fibrosed.

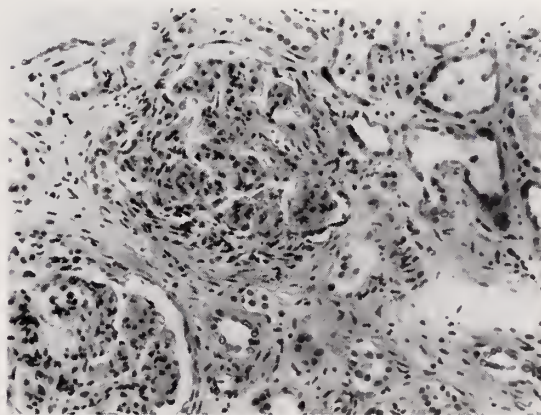


FIG. 4. Case 1. Fibrotic crescent of the glomerulus, with lobular simplification. Interstitium is scarred and focally infiltrated with mononuclear cells. Degenerative changes of tubules are also apparent.

Sections of the kidneys showed many of the glomeruli exhibiting crescent formation (figure 4). In some glomeruli the crescent was made up of both epithelial cells and fibroblasts, and occasional glomeruli were partially fibrosed. A few of the glomeruli revealed that some capillaries were plugged with fibrin thrombi. Occasional tubules were dilated, and some of these were filled with blood and hyaline casts; other tubules

were atrophic. The interstitium was rather diffusely fibrosed and focally infiltrated with mononuclear cells. Occasional afferent arterioles were considerably sclerotic. Additional microscopic findings included erythroid hyperplasia of bone marrow and acute fatty metamorphosis of the liver.

Comments. This case has all of the criteria of Goodpasture's syndrome. The patient had been hypertensive with a slightly elevated blood urea nitrogen. The serum iron was normal, suggesting a normochromic normocytic anemia. This tends to differentiate this disease from idiopathic pulmonary hemosiderosis in which is found a hypochromic microcytic anemia. The initial X-ray films showed only a minimal infiltration. Later the infiltration increased at the same time that the hematocrit dropped. At the postmortem examination no evidence of polyarteritis or other systemic disease was found. The predominant findings were old and recent pulmonary hemorrhage, diffuse subacute glomerulonephritis, and erythroid hyperplasia of the bone marrow.

Case 2. T. A. D. was a 40-year-old Negro admitted for the first time to Freedmen's Hospital on May 26, 1964 with a 4-day history of chills, fever, cough, and hemoptysis. He had a temperature of 103° F, pulse rate of 108 per minute, blood pressure 126/72 mm. Hg, height 72 inches, and weight 300 pounds. There were bilateral pulmonary rales. The rest of the physical examination was negative. The white blood cell count was 6,900/mm.³, the hematocrit 43 per cent, the hemoglobin 13.8 Gm. per 100 ml., the fasting blood sugar 108 mg., the blood urea nitrogen 101 mg., and the serum glutamic oxalacetic transaminase 70 units. Chest X-ray films revealed bilateral soft infiltration in the bases (figure 5). He was placed on Terramycin®, 250 mg. every 6 hours, and became afebrile. The daily urinary output was approximately 400 c.c. On May 31 the patient vomited black material. The next day the blood pressure was 220/105 and the urea nitrogen 250 mg. Peritoneal dialysis was performed. Two days later the blood pressure was 270/100; the hematocrit had dropped to 32 and the hemoglobin to 11.85 Gm. The patient was dehydrated and agitated and passed tarry stools on several occasions. About 9:00 p.m. that same day he became dyspneic and was digitalized. He was given aminophylline and oxygen, and rotating tourniquets were applied. He died on June 4, 1964, the tenth hospital day.

At autopsy the right pleural cavity was found to contain 10 c.c. and the left 20 c.c. of clear amber fluid. Both lungs were extremely heavy; the right weighed 1,440 Gm. and the left 1,200 Gm. Cut sections were reddish brown, mottled, and in some areas somewhat fibrotic, and bloody frothy fluid could be easily squeezed out. The heart was enlarged and weighed 580 Gm. There was biventricular hypertrophy; the

right ventricular wall measured 0.4 cm. and the left 1.4 cm. The right auricle and ventricle were dilated. There was no valvular lesion. The abdominal cavity contained approximately 1,200 c.c. of amber-colored fluid. The liver weighed 2,650 Gm., and the cut surfaces revealed some accentuation of lobular pattern. Both kidneys were greatly enlarged and swollen. Posterior to the right kidney there was an extensive perirenal hemorrhage. The right kidney together with the recent hematoma weighed 575 Gm. and the left 470 Gm. In both kidneys the capsule stripped with ease, and the surfaces were pale. On cut section the cortex bulged out from the cut surface, and the medulla was extremely congested. The other visceral organs were heavy but grossly unremarkable.



FIG. 5. Case 2. Soft infiltration at both bases, May 27, 1964.

Histologically the lungs showed scattered patchy areas of hemorrhage (figure 6). Many of the alveoli contained clumps of hemosiderin-laden macrophages. Some of the alveolar walls were thickened and exhibited focal nodular fibrosis. Some of the smaller arteries were sclerotic. The kidneys showed that the capillary tufts in some glomeruli had filled the Bowman's spaces. In the same areas there was focal thickening of the basement membrane and increased cellularity (figure 7). In others the Bowman's capsule displayed proliferation of the cells and fibrinoid swelling associated with focal synechiae of the glomerular tufts. Occasionally the glomerular capillaries contained fibrin thrombi (figure 8). Many of the tubules were dilated, and some revealed degeneration and necrosis of the lining epithelium. Frequently they contained pink granular material, and some were filled with blood and hyaline

casts. Occasionally calcium oxalate crystals were noted within the tubules. In some places the interstitium was edematous, focally fibrosed, and infiltrated by mononuclear cells and polymorphonuclear leukocytes. Some of the afferent arterioles were considerably sclerotic. There was no evidence of vasculitis; and the right perirenal hemorrhage was confined outside of the renal capsule and its source not apparent. There was no cellular reaction about the area of hemorrhage. The liver showed advanced chronic passive congestion. Additional findings were focal acute interstitial myocarditis, acute necrotizing esophagitis, gastromalacia, and mild erythroid hyperplasia of the bone marrow.

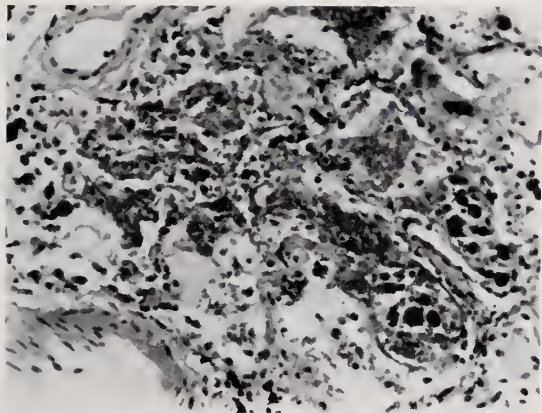


FIG. 6. Case 2. Clumps of hemosiderin-laden macrophages, many erythrocytes, and desquamated pneumocytes in alveoli. Occasional siderophages and deposits of iron pigment are seen in alveolar septa.

Comment. In this case the postmortem examination revealed severe pulmonary hemosiderosis and hemorrhage. The lung findings together with the proliferative lesions in the glomeruli and mild erythroid hyperplasia of the bone marrow suggested that this case might represent an early form of Goodpasture's syndrome. The rapid course was not long enough to develop full-blown renal lesions.

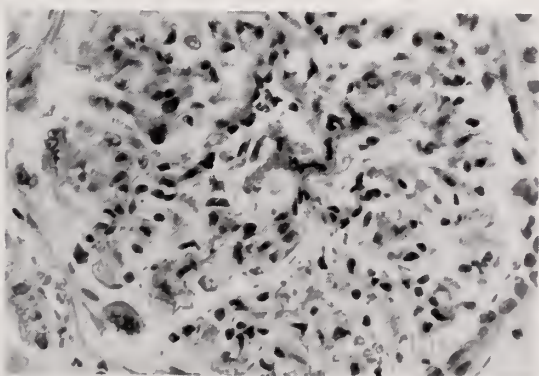


FIG. 7. Case 2. Proliferation of capillary tuft filling Bowman's space. Bowman's capsule reveals cell hyperplasia and focal synchiae.

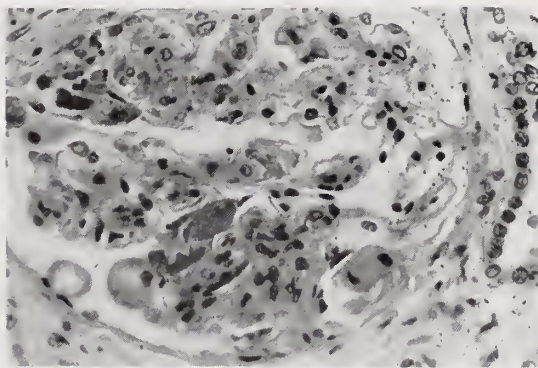


FIG. 8. Case 2. Fibrin thrombi in glomerular capillaries. In areas the basement membrane is thickened. In left upper corner a focal adhesion of Bowman's capsule is seen, together with proliferation of lining cells.

Discussion

In both cases the massive hemorrhage into the lungs was the probable cause of anemia, since no other evidence of significant hemorrhage was found. In primary pulmonary hemosiderosis the erythrocyte destruction in the lung is known to be the cause of anemia,²³ this anemia being of the iron-deficiency type. It is seen most often in children²⁴ and is rarely found in association with glomerulonephritis. Heptinstall and Salmon²⁵ reviewed 69 cases and found only 5 with renal involvement.

Idiopathic pulmonary hemosiderosis was described by Steiner²⁶ as an immune disease. Polyarteritis nodosa is also believed to be a hypersensitivity response to an unknown antigen.²⁷ Similarities in the clinical and pathologic findings²⁸ of these diseases and Goodpasture's syndrome have led to studies of the antigen-antibody phenomena in Goodpasture's syndrome too. Immunofluorescent studies and agglutination tests in patients with Goodpasture's syndrome appear to indicate the presence of an abnormal immune response.

Scheer and Grossman²⁹ found gamma globulin in the basement membrane of the kidneys of both of their patients. Duncan et al.³⁰ found 7S gamma globulin in 3 patients and beta 1C globulin in 1. Previous infection with group A type streptococcus was documented by an elevated antistreptolysin titer in the cases presented by Lundberg.²² In other cases the antistreptolysin O titer was not found to be elevated in spite of numerous tests.³¹ Virus-like particles were found in the kidney of 2 patients reported by Duncan et al.³⁰ They suggested the possibility that this syndrome is a viral disease with a hyperimmune renal reaction.

The treatment of Goodpasture's syndrome is primarily symptomatic although steroids have been used in about half the reported cases. The results of therapy with or without steroids have been very poor. Azen³² and Duncan³⁰ reported that some patients treated with steroids were asymptomatic 2 years after this therapy was started. Thus, steroid drugs should be tried in all patients with this syndrome.

The general impression is that Goodpasture's syndrome is an acute, rapidly fatal disease. In considering the survival time in 42 patients, 30 lived 6 months or less after the initial symptom; of the other 12 patients only 3^{11, 29, 32} were able to survive more than 1 year, one living as long as 12 years.²⁹ These findings confirm the rapid downhill course of this entity.

Summary

We have reported 2 cases of Goodpasture's syndrome in Negroes. To our knowledge these are only the second and third cases reported in this race. In the literature review, the possible hyper-immune mechanism and viral origin of this disease were discussed. Steroids appear to be the only therapy of promise.

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Intravenous Regional Anesthesia—Arteaga and Russell

(Continued from page 88)

An attempt has been made to give a detailed description of the technique for the physician who has not had experience with it, to make him aware of its indications, contraindications and pitfalls, and to urge its utilization in his daily practice.

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Project Head Start: Analysis of Medical Evaluations in a Local Program*

PEARL L. ROSSER, M.D.†

IN THE LATE FALL OF 1966 the Department of Pediatrics at Freedmen's Hospital undertook the task of assisting in the preparation and execution of a medical program for the United Planning Organization Head Start projects. In March 1967 this program was continued with Capital Head Start, Inc., which at that time became the central governing body for all Head Start Centers under United Planning Organization funding. To date 223 children have been evaluated in this program.

Objectives and Design of the Medical Program

The aims of the program were:

1. To provide a comprehensive health evaluation program in a community medical facility.
2. To design a health evaluation program in a setting in which there would be minimal interference with the educational and cultural role of the child development centers.
3. To provide ready and direct sources for referral of children needing further diagnostic evaluation or treatment in an appropriate specialty clinic.
4. To correlate and integrate information received from paramedical disciplines and consultant specialists.
5. To provide care, treatment, correction, and continued supervision for any health problem discovered.
6. To set up a direct line of communication between the child development centers (through the health coordinator) and the medical facility (through the supervising pediatrician).

Medical history. The registered nurse employed by U.P.O. Head Start who had experience in pediatrics and in public health assumed responsibility for obtaining the medical and developmental history. The medical history and physical examination forms available through the

Head Start central office were used with only a few minor adjustments. The forms were easy to use, and few difficulties were encountered in securing the necessary information in a short period of time.

Physical examinations. Complete physical examinations and brief developmental assessments were performed in the Pediatric Clinic of Freedmen's Hospital 3 afternoons per week. Height, weight, head circumference, and temperature were recorded on each child by the Head Start nurse, assisted by the licensed practical nurse from the Child Development Clinic of the Department of Pediatrics and the pediatric clinic nursing staff. Examinations and assessments were performed by pediatricians and pediatric residents assigned from the Department of Pediatrics. No more than 10 children were scheduled for any clinic session. Parents were encouraged to be present not only to provide significant information for the physician regarding the child but in order to stimulate their participation in, and emphasize the need for their involvement in a continuing health program for their children. Most parents were present. All data available were completely discussed with the parent at the time of the examination as were reasons for laboratory studies and any referrals.

Laboratory studies. The following studies were done routinely on all children: hematoerit, hemoglobin, sickle-cell preparation, urinalysis, and the Tine tuberculin test.

Vision and hearing testing. Screening tests for vision were provided by volunteers from the local chapters of Volunteers for Vision and the Society for the Prevention of Blindness. Screening tests for hearing were performed by volunteers from the Washington Hearing Society. These screening procedures were carried out in the individual child development centers, and this information was usually available on the medical forms when the child saw the pediatrician.

Dental evaluation. Dental evaluations were provided by dentists who are members of the local dental societies. The examinations were performed in private offices. Supervision of this program was

* From the Department of Pediatrics, Howard University College of Medicine and the Pediatric Service of Freedmen's Hospital, Washington, D. C.

† Clinical Assistant Professor of Pediatrics, Howard University College of Medicine, Washington, D. C. 20001.

provided by the Head Start dental consultant. Since the dental evaluation program was quite late getting started, this information was usually not available at the time of physical examination.

Results of the Medical Evaluation Program

A. Population of children involved to date in the medical evaluation program: 10 U.P.O. (subsequently Capital Head Start, Inc.) centers—223.

B. Age distribution

	No.	Per cent
Under 5 years	175	78.5
5 to 5½ years	41	18.5
Over 5½ years	7	3.0

C. Sex of children

	No.	Per cent
Male	112	50.2
Female	111	49.8

D. Race of children: All Negro

E. Percentage of poverty classification—90

F. Systemic diseases identified:

	No. Children
1. Central nervous system	2
2. Mental retardation	2
3. Eye defects (including acuity)	20
4. Ear, nose, throat	8
5. Cardiovascular system	3
6. Gastrointestinal (including hernias)	7
7. Genitourinary system	2
8. Musculoskeletal system	3
9. Hematologic disorders	13
10. Endocrine and metabolic disorders	4
11. Dermatologic disorders	4
12. Allergic disorders	3
Total	71

G. Laboratory studies:

1. Hemoglobin: 19 children had hemoglobins of less than 10.0 Gm. on initial screening. Further evaluation of this group revealed only 6 to have hemoglobins of less than 10 Gm., with hematocrits less than 30 per cent.

2. Sick-cell preparations: 12 children had positive reports. Hemoglobin electrophoresis on 8 of these children revealed 5 to have abnormal hemoglobins, all being of the sickle-cell trait (AS) variety. No homozygous sickle-cell anemia (SS hemoglobin) was found. All had hemoglobin levels above 10.0 Gm.

3. Urinalysis: 4 children showed abnormalities in the urine.

H. Tuberculin-testing: There were 3 positive Tine tests. These children were reportedly known previously to the Health Department Clinic for Tuberculosis.

I. Vision: 18 children failed to pass visual screening tests. They were referred for evaluation to the Eye Clinic.

J. Hearing: 7 children were identified with significant hearing deficits on screening. They were referred to the Ear, Nose and Throat Clinic for follow-up.

K. Incomplete immunizations:

	No.	Per cent
Children with incomplete and/or no immunizations	67	30

Discussion

Appraisal of the health evaluation program (as performed between December 1966 and June 1967) revealed many strong points as well as certain facets which needed strengthening. The evaluations were comprehensive and multidisciplinary. Care and treatment were provided by appropriate specialists with the pediatrician supplying continuity and integration of service. It is our opinion that the health evaluation program for Head Start projects are best executed in a structured medical setting.

The presence of a medical coordinator to supervise the program and to maintain liaison between the Head Start health coordinator and the medical facility was essential. The need for such a person was crystallized during this experience. The medical coordinator serves a dominant role in the following areas: performing and/or supervising physical examinations, keeping records, writing reports and other correspondence, discussing the health problems in the children with parents and with the project staff, attending conferences pertaining to the program, and planning for new and improved programs. It is imperative that pediatricians be involved in the planning for such programs and that the evaluations begin early in the project year.

The need for a psychologist at the local Head Start level was evident and urgent, particularly since referral sources in this area were limited and overcrowded. In the amount of time available for the medical evaluation a complete and individualized assessment of the psychologic development of each child was not possible. In addition, there was need to improve communications between dental and medical consultants with an opportunity for correlation of findings.

The health evaluation program began too late to provide adequate time for a comprehensive program in health education. It is anticipated that such a program will be developed and executed in the coming year. Parents will continually be encouraged to take an active role in seeking and maintaining continued medical care for child and family. It is planned that developmental assess-

ment will be made periodically throughout the program in the coming year, thus providing experience for teachers' aides, medical students, and residents.

Children who are enrolled in or eligible for D. C. Health Department Well Child Clinics will be referred there for whatever immunizations they lack. It is hoped that arrangements can be made for older children to receive missed immunizations through the medical evaluation program.

This program incorporates the principal health services outlined by the central office of Project Head Start.¹ Our medical findings were similar in many respects to those described by McClelland,² whose program involved children from the Greater Cleveland inner-city area.

Summary

This report outlines the experience of a Department of Pediatrics in executing a health evaluation program in a community medical facility in the Head Start Program.

The program was generally effective and offered continuing care to those children needing it. The children examined were for the most part healthy youngsters. The single most common finding was a lack of completion of routine childhood immunizations.

It is vitally important that an early and ongoing relationship be established between the agency and the pediatrician who is to supervise the medical evaluation program and that he be given the responsibility for developing and coordinating such a program. Adequate funding for the comprehensive health evaluation program is essential.

Mrs. Clarice Walker, Capital Head Start Health Coordinator, was helpful in setting up the medical evaluation program. Joan Smith, R.N., and Doll Gordon, L.P.N., assisted in scheduling and examining children and in obtaining historical and laboratory data.

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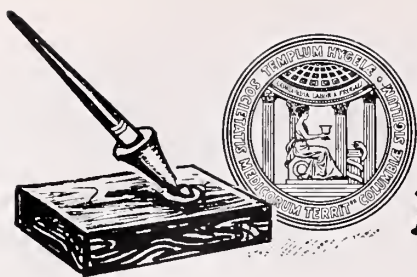
Drug Abuse and Abusers—Osborn

(Continued from page 99)

to justify the practice by the usual old saw: "Everybody does it."

Next we should try to keep informed about drug-control legislation. If you feel as I do that the state has a right to control the manufacture, distribution and usage of these drugs, you must support legislation tending to strengthen such control and fight proposed legislation which would make these drugs available without a medical prescription. Since the drugs being discussed are so widely used in medical practice, almost every house has 1 or more of them in the medicine cabinet. Such drugs should be kept out of reach of small children and even made inaccessible to adolescents. Drugs left over after cure of a disease probably should be destroyed. Recently some physicians in our area were warned that people have been found going through trash from medical buildings to obtain disposable hypodermic syringes and possibly drugs they can recognize. Hence disposing of samples by throwing them into the trash can be inadequate.

For those who are parents, educators, or employers, additional measures may be available. If they know and recognize the early signs of drug abuse they may be able to help the young drug abuser with whom they come into contact before they become "hooked." Certainly if we can provide a more stabilized environment, whether in the home, school, office or shop, we may be able to prevent drug abuse. Often an early attempt by the parent, the teacher, or the boss to try to understand a troubled youth can be much more effective than any formal later psychotherapy. A word of encouragement, an effort to let a troubled person tell you something about his problem, and to let him know someone is interested in him may help him take a rational approach to the conflicts and stresses of everyday life and thereby stay on the leeward side of the "drug curtain."



President's Page

PATIENT-PHYSICIAN MISUNDERSTANDINGS—SOME CAUSES AND REMEDIES



THE MEDICOLEGAL COMMITTEE of the American College of Surgeons has estimated that at least one-third of all malpractice litigation is due to poor doctor-patient relationship. During the past year more than one-half of the complaints brought before the Grievance Committee of the Medical Society of the District of Columbia were directly related to patient-physician misunderstandings.

There are several causes, I think, for this lack of understanding. The first of these is the failure of the average medical practitioner to realize the gravity of a medicolegal suit. It seems impossible to him that, without any negligence on his part, such legal action could ever be brought against him. Carrying adequate insurance, important though it is, is not enough. No physician who has not been through such an "experience" realizes the great loss of time, effort, and peace of mind, if not reputation itself, which a law suit may entail.

The practice of medicine is changing. Unfortunately, there has been a continuing decrease in the number of general practitioners; family doctors used to know their patients and their relatives over a period of many years, if not generations. Today, with our increasing specialization, a number of specialists may well be involved in the care of the patient: internist, radiologist, dermatologist, anesthetist, surgeon, and so on and on. Personal relationships may be so short that a sick man often thinks of the intern or resident as his personal doctor or that he has no one at all to listen to his complaints.

Perhaps the source of trouble in many instances comes from the too frequent delegation of patient care to office personnel. The choice of a physician's administrative office assistant is of the greatest importance. Ideally she should be a trained nurse, with a pleasing personality, unending patience, technical skill, and a good sense of proportion. She should be able to answer many telephone calls herself, but she should always notify the doctor of these calls and refer important messages to him without delay. It is the medical practitioner himself who is ultimately responsible for the proper supervision of his staff. Improper and unsympathetic handling of patients by office personnel caused many of the complaints dealt with by the Grievance Committee.

Perhaps these comments can best be summarized by a quotation from Peabody: "The proper care of the patient simply means to care FOR the patient."

William S. McLure



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study I¹ Results of a 1967 in vitro—in vivo correlation study involving 116 patients with Gram-positive coccal infections in five institutions. All patients were given TAO prior to determining the susceptibility of the offending organism.

97.0%
of the
organisms were
susceptible
to oleandomycin*

98.0%
of the
patients
responded
favorably
to TAO®(triacetyloleandomycin)

*In some cases more than one pathogenic organism was isolated from the patient.

TAO Rx Information

INDICATIONS: Include streptococci, staphylococci, pneumococci and gonococci. Recommended for acute, severe infections where adequate sensitivity testing has demonstrated susceptibility to this antibiotic and resistance to less toxic agents. **CONTRAINDICATIONS AND PRECAUTIONS:** Not recommended for prophylaxis or in the treatment of infectious processes which may require more than ten days continuous therapy. In view of the possible hepatotoxicity of this drug when therapy beyond ten days proves necessary, other less toxic agents should be used. If clinical judgement dictates continuation of therapy for longer periods, serial monitoring of liver profile is recommended, and the drug should be discontinued at the first evidence of any form of liver abnormality. When treating gonorrhea in which lesions of primary or secondary syphilis are suspected, proper diagnostic procedures, including darkfield examinations, should be followed. In other cases in which concomitant syphilis is suspected, monthly serological tests should be made for at least four months. Contraindicated in pre-existing liver disease or dysfunction, and in individuals hypersensitive to the drug. Although reactions of an allergic nature are infrequent and seldom severe, those of the anaphylactoid type have occurred on rare occasions. When used in streptococcal infections, therapy should be continued for ten days to prevent the development of rheumatic fever or glomerulonephritis. The use of antibiotics may occasionally permit overgrowth of nonsusceptible organisms. A resistant infection or superinfection requires re-evaluation of the patient's therapy. In the event such occurs with this drug the medication should be discontinued, and specific antibacterial and supportive therapy instituted.

References: 1. Isenberg, H. D.: Clinical Evaluation of Laboratory Guidance to Antibiotic Therapy; Health Laboratory Science (July) 1967. 2. Saslaw, S., Carlisle, H. N.: Studies on Therapy of Staphylococcal Infections in Monkeys. 1. Comparison of Cloxacillin, Triacetyloleandomycin and Erythromycin. Proc. Soc. Exp. Biol. & Med.: Vol. 125, No. 4 (Aug.-Sept.) 1967.

study II² Effect of oral therapy with TAO, erythromycin, and cloxacillin on the survival time of Rhesus monkeys after intravenous inoculations of lethal doses of staphylococci, phage type 80/81. (8 monkeys in each group)

conclusion:

*Under the conditions of this study and the doses employed, it was found that

**TAO®(triacetyl-
oleandomycin)**
was far superior to erythromycin, as was cloxacillin, a bactericidal agent, and of particular interest, "...bacteriostatic triacetyloleandomycin was as effective or perhaps superior to cloxacillin in preventing lethal (staphylococcal, phage type 80/81) infection."

*It should be pointed out that results obtained in an experimental study of this nature may not necessarily be directly extrapolated to the clinical situation as it pertains to man.



**J. B. ROERIG DIVISION
CHAS. PFIZER & CO., INC.
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HALT DIARRRHEA!



LOMOTIL[®]

TABLETS/LIQUID

Each tablet and each 5 cc. of liquid contains:

diphenoxylate hydrochloride 2.5 mg.

(Warning: may be habit forming)

atropine sulfate 0.025 mg.

Halts Diarrhea Promptly

in children with . . . Gastroenteritis ■ Spastic bowel
Influenza-like infections ■ Antibiotic-induced diarrhea

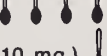
Lomotil helps get children with diarrhea off toast and tea and back to normal diets and normal activity with gratifying dispatch. ■ Lomotil lowers intestinal motility and permits absorption of excess fluid. This usually controls diarrhea promptly. ■ Moreover, lowered intestinal motility achieved with Lomotil often relieves the abdominal cramps and discomfort so distressing to children.

Precautions: Lomotil is a Federally exempt narcotic preparation of very low addictive potential. Recommended dosages should not be exceeded, and medication should be kept out of reach of children. Should accidental overdosage occur signs may include severe respiratory depression, flushing, lethargy or coma, hypotonic reflexes, nystagmus, pinpoint pupils, tachycardia; continuous observation is recommended. Lomotil should be used with caution in patients with impaired liver function or those taking addicting drugs or barbiturates.

Side Effects: Side effects are relatively uncommon but among those reported are gastrointestinal irritation, sedation, dizziness, cutaneous manifestations, restlessness, insomnia, numbness of the extremities, headache, blurring of vision, swelling of the gums, euphoria, depression and general malaise.

Dosage: The recommended initial daily dosages, given in divided doses until diarrhea is controlled, are:

Children: Total Daily Dosage

3-6 mo. . . ½ tsp.* t.i.d. (3 mg.)	
6-12 mo. . ½ tsp. q.i.d. (4 mg.)	
1-2 yr. . . ½ tsp. 5 times daily (5 mg.)	
2-5 yr. . . 1 tsp. t.i.d. (6 mg.)	
5-8 yr. . . 1 tsp. q.i.d. (8 mg.)	
8-12 yr. . . 1 tsp. 5 times daily (10 mg.)	
Adults: . . 2 tsp. 5 times daily (20 mg.)	
or 2 tablets q.i.d.	

*Based on 4 cc. per teaspoonful.

Maintenance dosage may be as low as one-fourth the initial daily dosage.

SEARLE

Research in the
Service of Medicine

When the agitated businessman goes to work...

He goes home at night and takes it out on his family.

He loses his temper with colleagues and subordinates.

Emotionally upset, he misses half of what is said at meetings.

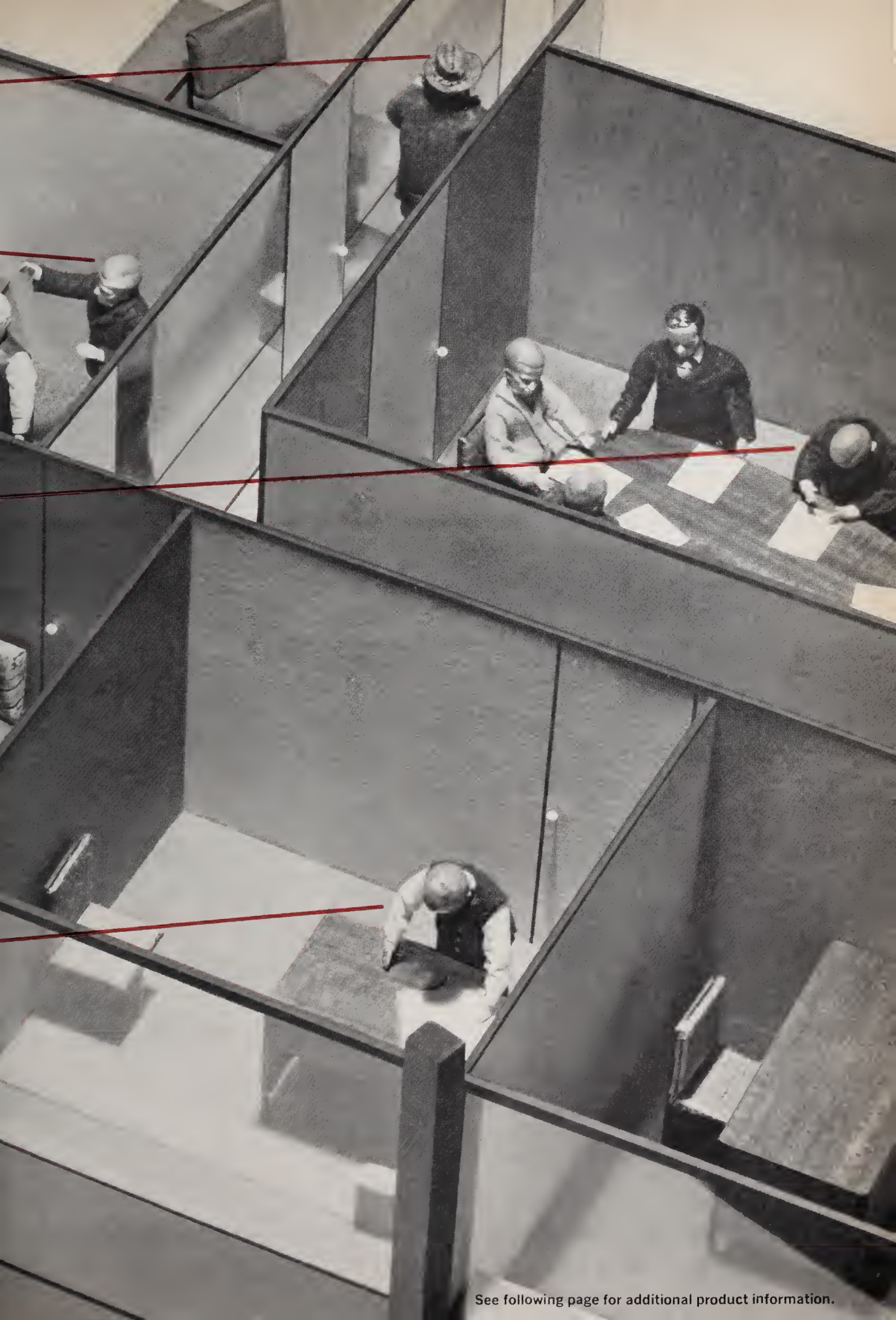
He is always fearful about his standing with the boss.

He just can't seem to settle down to his work.

for moderate to severe anxiety

Mellaril[®]
(thioridazine)
25 mg. t.i.d.





See following page for additional product information.

When the agitated businessman goes to work...

Anxiety that seriously interferes with the individual's performance at work, at home, or in the community may be regarded as moderate to severe in degree.

Mellaril often recommends itself to the treatment of moderate to severe anxiety because it

- helps control the most frequent symptoms: marked tension, agitation, apprehension, restlessness, hypermotility

- often alleviates anxiety-induced somatic complaints

- frequently helps strengthen emotional resources

- helps the patient maintain realistic contact with environment, closer harmony with family

Thus, when you consider the anxiety moderate to severe... consider Mellaril.

Contraindications: Severely depressed or comatose states from any cause, and in association with or following MAO inhibitors; severe hypertensive or hypotensive heart disease.

Precautions: Hypersensitivity reactions (e.g., leukopenia, agranulocytosis) and convulsive seizures are infrequent. Pigmentary retinopathy has been observed where doses in excess of those recommended were used for long periods of time. May potentiate central nervous system depressants, atropine, and phosphorus insecticides. Where complete mental alertness is required, administer the drug cautiously and increase dosage gradually. In addition, orthostatic hypotension (especially in female patients) has been observed. Epinephrine should be avoided in treatment of drug-induced hypotension.

Side Effects: Pseudoparkinsonism and other extrapyramidal disorders are infrequent; drowsiness, especially in high doses early in treatment, may occur; nocturnal confusion, dryness of the mouth, nasal stuffiness, headache, peripheral edema, lactation, galactorrhea, and inhibition of ejaculation are noted on occasion; photosensitivity and other allergic skin reactions may occur but are extremely rare.

Before prescribing, see package insert for full product information.

for moderate to severe anxiety

Mellaril[®]
(thioridazine)
25 mg. t.i.d.



mudrane[®]

for

- EMPHYSEMA
- ASTHMA
- CHRONIC BRONCHITIS
- BRONCHIECTASIS

*The
fast-disintegrating
uncoated tablet
gives relief in
15 minutes*

Each tablet contains:

Potassium Iodide..... 195 mg.
Aminophylline..... 130 mg.
Phenobarbital, Caution: May be habit forming... 21 mg.
Ephedrine HCl..... 16 mg.

FEDERAL LAW PROHIBITS
DISPENSING WITHOUT PRESCRIPTION

Precautions: Usual for aminophylline-ephedrine-phenobarbital. Iodides may cause nausea, long use may cause goiter. Discontinue if symptoms of iodism develop.

Iodide contraindications: tuberculosis, pregnancy.

DOSAGE

One tablet, with full glass of water, 3 or 4 times daily.

Dispensed in bottles of 100 and 1000 tablets.

MUDRANE GG—Formula, dosage and package identical to Mudrane—*except*—100 mg. glyceryl guaiacolate replaces the potassium iodide. The value of Mudrane cannot be enjoyed by a small group in which K.I. is contraindicated. Mudrane GG is prepared for this group.

MUDRANE GG ELIXIR—Four 5 cc teaspoonfuls is equivalent to one Mudrane GG tablet. Dosage adjusted to age and weight of child. Mudrane GG Elixir is for pediatric patients and those who think they cannot swallow tablets. Dispensed in pint and half gallon bottles.

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Manufacturers of ethical pharmaceuticals since 1856





HEART MONTH—February 1968

A Proclamation by the Commissioner of the District of Columbia

WHEREAS, the diseases of the heart and the circulatory system constitute our nation's greatest single health problem; and

WHEREAS, our doctors and our allied men of science tell us that the solutions to the problems of cardiovascular disease will be found through research, in the education of the physicians and the public, and in devising community services to assist those stricken by this disease; and

WHEREAS, the above-mentioned efforts comprise the program of the Washington Heart Association, which, in the highest American tradition, has dedicated itself to the cause of finding the answers to the questions posed by heart and circulatory diseases and is the only voluntary agency which concerns itself with this twentieth-century epidemic; and

WHEREAS, during February 1968 more than 10,000 of our own Washington citizens will unselfishly call at the homes of their neighbors to seek their support of this great cause:

NOW, THEREFORE, I, THE COMMISSIONER OF THE DISTRICT OF COLUMBIA, do hereby proclaim February 1968 as "HEART MONTH," and I urge all of our citizens to welcome the public-spirited men and women who have so generously volunteered to ask the help of their neighbors in this important cause.

WALTER E. WASHINGTON

Commissioner of the District of Columbia

Medical Books—Too Many? Too Few?*

MEDICAL LITERATURE is growing at an ever-increasing rate. The figures for medical books (periodicals are outside the scope of this survey) are truly staggering: *British Medical Books*, published by the British Council, lists no less than 1,341 new titles for 1966—this covers British and Commonwealth titles only. *Medical Books in Print* (1966–1967 edition), listing mainly U.S.A. titles, shows well over 4,000 entries. The list of the most prolific medical publisher in the U.S.A. shows approximately 1,500 titles.

Superficially there seem to be far too many medical books. Yet in a sense there are too few. There is a shortage of really first-rate modern reference works in many fields, just to mention Gynecological Endocrinology, Radiology of the Ear, Nose and Throat, Pediatric Urology, etc. (although new works and editions on these subjects are in preparation), but generally speaking far too many medical books are published.

The author, following the trend of "publish or perish," tries to have his *magnum opus* published; the publisher tries to build up his list often without regard to the merit of the manuscript. Yet there is a worldwide shortage of first-rate manuscripts, and often they will gravitate toward the lists of the top publishers in the medical field. So weak lists often grow weaker and strong lists stronger.

How are books selected for publication? The publisher will at once reject books in which the subject matter is too specialized or where the manuscript is sloppy or shoddy or where the author's reputation is doubtful. After this preliminary investigation the manuscript is examined for originality, scientific merit, sales potential, competitive literature, suitability as a textbook, and chances of adoption. The author is being scrutinized for professional standing, previous literary contributions, qualifications, and appointments. There will be some market research, estimate of potential, immediate response, etc.

* Reprinted by permission from *The Kalends* of the Waverly Press, Inc., July–August 1967, pp. 6–7.

Finally there are questions of economies such as capital outlay, approximate list price, margin of profit, and publishing risks.

In spite of generally rising costs the price of medical books is still relatively low, allowing for the restricted circulation, cost of production arising from the high standard of printing, and the large number of illustrations. In order to keep costs down without sacrificing quality, some publishers have achieved remarkable results by "co-production." This means that 2 or more publishers join forces in having the plates and illustrations for all editions, including those in foreign languages, printed simultaneously. An outstanding example of such coöperation was the simultaneous printing of the plates for no less than 5 separate editions which reduced the cost of production of the many color plates involved by almost 65 per cent. Additional revenue can also

be derived from the sale of translation rights, the proceeds of which are shared between the author and the original publisher.

Is medical writing profitable? Generally the answer is in the negative. The rewards, especially those from specialized monographs, are often modest. They will not compensate the author adequately for the loss of his valuable professional time. Exceptions do exist, especially in the case of textbooks which are prescribed by a number of medical schools. But as a rule medical writing is a labor of love which has its own reward. To see one's first book in print, to hold the first hand-bound copy and to see it launched on its first and often perilous voyage are very special experiences which are truly "priceless."

P. B. MAYER

EDITOR'S NOTE: Mr. Mayer is a medical bookseller in South Africa.

Cadavers for Medical Schools

THE STEADY DRIVE by Memorial Societies and other groups to encourage the bequeathal of bodies to medical schools has resulted in a significant increase in the supply of cadavers available for medical education. Most of this increase, however, has taken place in limited areas, whereas other areas are experiencing increasing shortages.

Washington, D. C. is one of the places in which the need for human biological material is still urgent. Doctors should be aware of the problem and encourage the bequeathal of bodies to education whenever they can.

A detailed report of this situation, together with a résumé of the procurement policies followed by all the medical and dental schools in the United

States and Canada, will be found in the third edition of "A Manual of Simple Burial" (\$1.00, Celo Press, Burnsville, North Carolina) which recently appeared with extensive revisions. All proceeds from the sale of the booklet are used to help support the Arthur Morgan School.

Included in the Manual is a comprehensive question-and-answer discussion of the legal and personal problems involved in bequeathing one's body to education or research. In addition it contains extensive information about the needs and problems associated with death, with special reference to Memorial Societies.

ERNEST MORGAN

The Celo Press, Burnsville, N.C.

The Membership Committee—Every Member a Member

FOR THE FIRST TIME in the 150 years of existence of the Medical Society of the District of Columbia (1817-1967), the Executive Board has assigned specific duties to a Membership Committee. One of these duties is to contact D. C. physicians who are not members of the Medical Society and invite them to become members.

While we have no "sales pitch" to make, we believe all physicians in the District of Columbia can benefit themselves, the public, and the profession as a whole by membership in their professional society, a state component of the American Medical Association.

Each of us in our practice, teaching area, or

administrative position feels himself adequately and probably overcommitted in time. Specialty group and hospital staff meetings occupy much of our time and interest. Yet, basically it is the Medical Society, devoted to the interests of all physicians, to the profession's liaison with many allied and public groups, that has been the catalyst to the positions we now occupy. I hope each member of the D. C. Medical Society will appoint himself an *ex officio* member of the Membership Committee.

IRVING BURKA, M.D.

Chairman, Membership Committee

Question of the Month

Do you believe physicians might turn over the simpler and routine aspects of medical practice to the nonphysician, a so-called "clinical associate"? If so, to what extent?

Answers and Comments

THOMAS M. ARNETT, M.D. (Administrative Medicine): Simpler and routine aspects of medical practice can be relegated to a clinical associate when certain basic aspects are kept in mind.

The business aspects of a doctor's office have importance in creating his image and in furthering a good relationship with his patients. Therefore, the person chosen should be an understanding individual as well as being competent. The physician should retain control of any correspondence, etc. which might become threatening to the patient.

Some aspects of the physician's business which might be given over are: billing procedures, maintaining the payroll, keeping financial records for income tax purposes, managing retirement program, paying of all bills such as rent, etc. The physician should obtain a monthly statement as to the business conducted, and at regular intervals (preferably yearly if the business is large) should have his books audited by an outside accounting firm which can give advice to the "clinical associate" as well as check the accuracy of his records. The associate should be bonded.

ELOISE W. KAILIN, M.D. (Allergy): I do not know what training and background are possessed by a non-M.D. "clinical associate." The ways in which such a person might safely help would be determined by those qualifications and by the conscientiousness of the individual associate under consideration. I do believe it is important that a fully trained and qualified physician examine each new patient and see all patients at the onset of each new illness, and periodically thereafter, to determine whether only "the simpler and routine aspects of medical practice" are applicable.

WILLIAM T. SPENCE, M.D. (Neurosurgery): Yes, I believe there are some areas that could be covered by a non-M.D. "clinical associate," especially "paper work," and I believe these specialists should be paid by the hospitals. Surgical assistants can be trained from non-medical ranks, both male and female. We did this to advantage during the War and it worked out well. Orderlies can be trained to "prep" in the operating room as well as nurses, but like nurses, interns, et al, it depends on the intelligence of the individual and what he or she will be paid.

PETRENA ABBE SHEA, M.D. (Obstetrics-Gynecology): Nurses in our office who answer the telephone answer many questions and handle many problems of our patients. A large percentage of these queries do not require an M.D.'s attention. Some persons are seeking reassurance and some lack common sense or the ability to follow orders.

Certainly a "clinical associate" could screen many queries and do the routine "first aid" aspects of medical practice. Perhaps even some routine check-ups following treatment before release for a particular disease or condition could be turned over to the "clinical associate."

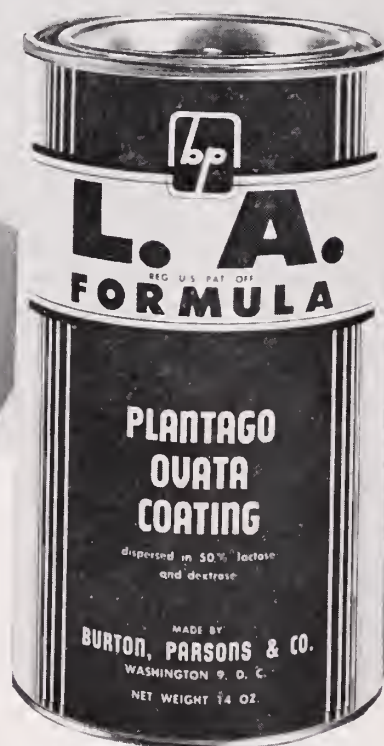
CLIFTON R. BROOKS, M.D. (Allergy): I think that physicians have always delegated simpler and routine tasks to those who could do them as well or who should learn to do them as well as the physician, always keeping in mind that any given patient deserves to be treated appropriately. By this I mean that some patients will want to spare the doctor's time and will feel that they are making inefficient use of the doctor's talents if he does all the treatment; others, such as little old ladies, often appreciate exceedingly the doctor who does even the smallest kindness for them himself. I do this

two safe and effective means to promote normal peristalsis

**IN THE TREATMENT OF EITHER
CONSTIPATION
OR DIARRHEA**



■ *Calorie-free medication
for the obese patient.*



■ *For the patient who
desires maximum palatability.*

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and have always reserved the privilege of deciding such things myself. This has caused differences with other physicians on occasion when I was part of a group that was in the business of providing care rather than practicing medicine.

This subject, like so many that being raised today as if they were *de novo*, is one that I am sure all physicians from time immemorial have solved for themselves and have taken the responsibility for without making any to-do about it.

If any members have dissenting views, your Editorial Staff will be pleased to receive and publish them.

Report of Delegates to the AMA Clinical Session

Houston, Texas, November 26-29, 1967

AT THE OPENING SESSION a handsome, illuminated plaque was presented to your delegate for the Medical Society of the District of Columbia in commemoration of the 150th anniversary of its founding. Dr. Gerald Dorman, Trustee, and Dr. Henry Fineberg, Chairman of the New York delegation, made the presentation on behalf of the Medical Society of the State of New York.

Dr. Owen H. Wangenstein, Director of the Department of Surgery at the University Hospital, Minneapolis, was nominated for the 1968 Distinguished Service Award to be presented to him during the AMA meeting in San Francisco in June.

A comprehensive report on the AMA-ERF was made by its President, Dr. Charles L. Hudson. In it was a proposal that the Institute for Bio-Medical Research, now located in the AMA Headquarters Building, be relocated on or contiguous to the campus of the University of Chicago. The House of Delegates endorsed this "in principle" and requested an annual report on the budget of the Institute and the amount of the projected contribution from the AMA to the Institute during that period.

There was action on a number of changes in the Constitution and By-laws which largely covered matters of procedure.

In the field of medical education the House adopted a summary by the Board of Trustees of the Report of the Commission on Research. Two recommendations of that report were particularly significant: no. 12 encouraged research in the delivery of health care, provided it is conducted under proper auspices and in accordance with sound research design and methodology; no. 13 was addressed to correcting the imbalance between biomedical research and education caused by the "heavy but desirable Federal support of

research" and stressed that "there should be allotted a greatly increased amount for operational expenses for medical schools, to be matched by those schools through private or local government sources."

The approval of this recommendation changes the policy of the AMA with respect to Federal support for medical education. The change results from recognition of the fact that Federal financial support is now accepted by American medical schools.

The House directed that the Association, through the Council on Medical Education, attempt to restore teaching to its proper place in medical education and to bring to it at least an equal share of prominence, honor, and funds with research, which at present is getting the larger share. It also adopted guidelines for medical staffs in hospitals with intern and resident training programs.

A brief report was adopted on the "Report on the National Advisory Commission on Health Manpower" which was submitted to President Johnson only a week before. The House voted to enlarge the AMA Committee on Health Manpower by the addition of 4 members to enable more careful study of the Report. This matter will be considered further in future meetings.

The Association will strive for the establishment of a medically oriented Federal commission on Health Research and Medical Manpower to assure a proper balance of health personnel among government agencies, the Armed Forces, and the civilian population. Also, a report will be made at the next meeting evaluating the foreign intern, resident and physician program.

Relative to health care, the House emphasized that the standards of medical care are set at the local level, and it directed attention to the dis-

turbing trends toward the possible establishment of national medical care standards. It further committed the Association to continue to inform the public, the profession, and others in the health care field as to the practical means of moderating health care costs, the value of voluntary prepaid health insurance, and the need for expanding the medical manpower supply and for improving the health care of the American public. It urged state and local societies to participate in the areas of overall planning for governmental and private health care programs.

The House reaffirmed that the procurement, processing, distribution or use of blood and other human tissue is a medical service and not the selling of a commodity. All are urged to seek and support legislative action, both Federal and state, to implement this concept.

Guidelines were approved which recognized the propriety of trained, competent registered nurses using monitoring, defibrillating and resuscitative equipment if a licensed physician is not immediately available, and a format for medical staff regulations governing such situations was outlined.

The House reiterated its previous recognition of alcoholism as a complex disease and that its medical components are medicine's responsibility.

Support for direct billing under the Federal Medicare program was reaffirmed, and the Association was instructed to continue its efforts to provide for the implementation of Title 19 in a manner which recognizes the right of the physician to bill directly all patients, including those eligible under Title 19, and "allows the physician or his patient to be reimbursed his usual, customary and reasonable fee for his professional services" and that changes be sought in the law that will secure "equal and simultaneous application to all jurisdictions."

Continued opposition to S.2299, the Long drug bill, was urged.

The Association was directed to study problems raised because both Medicare and Medicaid provide payment for medical care rendered patients by residents and to develop guidelines that will be acceptable to supervising physicians, teaching institutions, and government agencies involved in the payment process.

The House proposed that the presence of physicians on hospital Boards of Trustees is the most effective method of liaison between the medical staff and hospital governing authorities. The need for simplifying attendance requirements for maintaining membership on hospital medical

staffs was recognized, and it was pointed out that there is a broad latitude for working this out at the hospital staff level. Prompt revision of the ruling of the Joint Commission on the Accreditation of Hospitals on the use of interns in non-university affiliated hospitals is sought with incorporation of adequate safeguards to insure the quality of programs of intern education.

The sites and dates for future conventions of the Association were set through 1974, as follows:

	ANNUAL	CLINICAL
1968	San Francisco, June 16-29	Miami Beach, December 1-4
1969	New York, July 13-17	Denver, November 30-December 3
1970	Chicago, June 21-25	Boston, November 29-December 2
1971	Atlantic City, June 20-24	New Orleans, November 28-December 1
1972	San Francisco, June 18-22	Atlanta, November 26-29
1973	New York, July 15-19	Anaheim, Calif., November 25-28
1974	Chicago, June 16-20	Portland, Ore., December 1-4

As written in its Constitution, the overall purpose of the American Medical Association is: "To promote the science and art of medicine and the betterment of public health." In order to more precisely define the purposes of the Association in the present day a detailed statement of purposes and responsibilities was adopted by the House. The entire statement follows:

The Purposes and Responsibilities of the American Medical Association

It is the responsibility of the American Medical Association, as the representative of the American medical profession, to continue to foster the advancement of medical science and the health of the American people.

Its continuing purposes are to meet this responsibility through the following means:

1. By encouraging the further development of medical knowledge, skills, techniques and drugs; and by maintaining the highest standards of practice and health care.

2. By creating incentives to attract increasing numbers of capable people into medicine and the other health-care professions.

3. By advancing and expanding the education of physicians and other groups in the health-care field.

4. By motivating skilled physicians who have the art of teaching to apply themselves to developing new generations of excellent practitioners.

5. By fostering programs that will encourage medical

and health personnel to serve voluntarily in the areas of need for medical care.

6. By developing techniques and practices that will moderate the costs of good medical and health care.

7. By seeking out and fostering means of making all health-care facilities—physicians' offices, hospitals, laboratories, clinics and others—as efficient and economical as good medical practice and attention to human values will permit.

8. By combining the utilization of the latest knowledge for prevention and treatment with the vital healing force of the physician's personal knowledge of and devotion to his patient.

9. By maintaining the impetus of dedicated men and women in providing excellent health care by preserving the incentives and effectiveness of unshackled medical practice.

10. By maintaining the highest level of ethics and professional standards among all members of the medical profession.

11. By continuing to provide leadership and guidance to the medical profession of the world, meeting the health needs of changing populations.

In all, the House of Delegates considered 96 items of business in the 3½ days of what was a hard-working but not particularly brilliant meeting.

RAYMOND T. HOLDEN, M.D., *Delegate*

C. WILLARD CAMALIER, JR., M.D., *Delegate*

As your senior delegate it seems only proper that I should express my appreciation to my colleague, C. Willard Camalier, who has completed his term as delegate. Willard has served ably and well over the 6 years he has been in the House. He is very highly respected by the host of friends he has made among the other delegates, who were unanimous in their regret that he will not be returning. He has served the House as a member and as chairman of several reference committees and he was considered an outstanding member because of his judgment and wisdom. His presence and experience will be missed.

R. T. H.

► DOCPAC BRIEFS

A Call by AMA President Rouse

WE ARE WELL INTO 1968 and another important political year. Your District of Columbia Political Action Committee (DOCPAC) is once again raising funds to be placed in critical congressional districts so that more friends of medicine and persons dedicated to freedom may be elected to Congress.

Drug Abuse—Altering Prescriptions

A GIRL requested an appetite-suppressing medication from a physician. For a trial the physician cautiously prescribed 10 tablets of an amphetamine. This patient had been using amphetamines regularly and heavily. She altered his prescription from 10 to 100. Since a number of such prescription alterations have occurred in the Washington area, it would be helpful in reducing drug abuse if the physician would write out the number as well as give the numeral; for example, if the prescription had read, “— tablets, no. ten (10),” no excess of amphetamine could have been obtained.

COMMITTEE ON PROBLEMS OF DRUG DEPENDENCE

Washington Psychiatric Society

N.B. The Committee would appreciate it if members of the D. C. Medical Society will comment on or relate their experiences concerning problems of drug abuse or misuse.

In the December 11, 1967, issue of *The Journal of the American Medical Association* was a speech written for the House of Delegates by Dr. Milford O. Rouse, President of the AMA. I should like to quote him: “Freedom is much like a great bonfire. The more people who work to feed it, tend it, and protect it, the more brightly it burns. . . . The physician of today and of tomorrow is an active, participating citizen of his community, carrying his share of civic responsibility. And ‘responsibility’ includes leadership in surveying health facilities and potential health needs in his own community, followed by leadership in proper implementation. Medical citizenship calls for active participation in AMPAC and local and state political action groups.”

This call by the President of the AMA should be heeded by all of us. Contribute to good government. Join the District of Columbia Political Action Committee now. Individual membership: \$20.00. Family membership: \$30.00. Contributions up to \$99.99 gratefully accepted. Send your money to DOCPAC, 825 New Hampshire Avenue, N.W., Washington, D. C. 20037.

WILLIAM H. COOPER, M.D.
*Chairman, D. C. Political
Action Committee*



Photo professionally posed.

No injection after all! This penicillin produces high, fast levels—orally.

Pen·Vee® K is usually so rapidly and completely absorbed that therapeutic penicillin levels are attained within 15 to 30 minutes. Thus it can often obviate the need for penicillin injections. The higher serum levels produced generally last longer than with those of oral penicillin G.

Indications: Infections susceptible to oral penicillin G; prophylaxis and treatment of streptococcal infections; treatment of pneumococcal, gonococcal, and susceptible staphylococcal infections; prophylaxis of rheumatic fever in patients with a previous history of the disease.

Contraindications: Infections caused by nonsusceptible organisms; history of penicillin sensitivity.

Warnings: Acute anaphylaxis (may prove fatal unless promptly controlled) is rare but more frequent in patients with previous penicillin sensitivity, bronchial asthma or other allergies. Resuscitative (epinephrine, aminophylline, pressor amines) and supportive (antihistamines, methylprednisolone sodium succinate) drugs should be readily available. Other rare hypersensitivity reactions include nephropathy, hemolytic anemia, leucopenia and thrombocytopenia.

In suspected hypersensitivity, evaluation of renal and hematopoietic systems is recommended.

Precautions: In suspected staphylococcal infections, perform proper laboratory studies including sensitivity tests. If overgrowth of nonsusceptible organisms occurs (constant observation is essential), discontinue penicillin and take appropriate measures. Whenever allergic reactions occur, withdraw penicillin unless condition being treated is considered life threatening and amenable only to penicillin. Penicillin may delay or prevent appearance of primary syphilitic lesions. Gonorrhea patients suspected of concurrent syphilis should be tested serologically for at least 3 months. When lesions of primary syphilis are suspected, dark-field examination should precede use of penicillin. Treat beta-hemolytic streptococcal infections with full therapeutic dosage for at least 10 days to prevent rheumatic fever or glomerulonephritis. In staphylococcal infections, perform surgery as indicated.

Adverse Reactions: (Penicillin has significant index of sensitization): Skin rashes, ranging from maculopapular eruptions to exfoliative dermatitis, urticaria; serum sickness-like reactions, including chills, fever, edema, arthralgia and prostration. Severe and often fatal anaphylaxis has been reported (see "Warnings").

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Community Planning for Health Services*

CHARLES L. HUDSON, M.D., F.A.C.P.†

ALMOST EVERY STRANGER who speaks to me nowadays ventures the opinion that this must have been a very interesting time to have been the President of the American Medical Association, inasmuch as my election coincided almost exactly with the passage of the Social Security Amendments of 1965. It has been interesting and remains so. It has been necessary to keep up to date because interest has changed from the first description of Medicare to how it affects us and our patients, and finally to speculations about what will happen in the future.

Many people—not just physicians—I find are apprehensive about the future, about the growth of centralized government. I frequently hear the English statesman Thomas Macaulay quoted, who a century ago predicted, in commenting on our form of government, that “some Caesar or Napoleon will seize the reins of government with a strong hand,” and further to the effect that those forces that might be expected to ravage our democratic institutions will have been engendered from within; that is, the people themselves in their quest for something self-satisfying will voluntarily give dictatorial power to an individual, or a coalition, and abdicate their responsibility, giving up freedom in order to obtain security.

I am reminded of the comment of Macaulay's contemporary, Viscount Melbourne, who said, “I wish I was as cocksure of anything as Tom Macaulay is of everything.” This only tends to discredit Macaulay as a political prognosticator but is not entirely reassuring in view of the observations that one may make for himself and conclusions that he may thereafter draw.

I fully realize that the Association of which I was President embraced a minimum of 2 viewpoints, one to throw down the challenge to almost every form of government activity in health, and the other to acquiesce and submit. Between these 2 extreme positions are most of the physicians of this country, I believe, and in supporting their

position I have encouraged our members to devote themselves to their principal activity, which is the practice of medicine, while being alert to the potential impact upon what they may be able to do for their patients and themselves through the multiple governmental-funding programs which at least have the potential of modifying the practice of medicine.

Some of my colleagues are critical of this judicious approach to our problems. I believe that it is merely the approach of the judge or the one who must see all sides of a question as contrasted with that of the advocate who need concern himself with only one side. Time and circumstance will determine which approach is the more effective.

Few are either so naïve or so radical as to say unequivocally that government spending for health should or will stop. There are too many services that can only be provided and too many projects that can only be successfully executed in a nation such as this one by Federal governmental action. We would not arbitrarily remove all names from the welfare rolls nor wipe out the Government's obligations toward those who are its dependents because of circumstances they cannot control. This is much too wealthy a country for people to be in dire want because they are genuinely unable to provide for themselves.

But the necessity for helping certain of its citizens does not indicate a need to extend the same help to everybody. The Government does not owe all of its citizens a living; it only owes to them a governmental climate in which there is opportunity for everyone to make his own living. There is a vast difference in these 2 concepts.

With this philosophy firmly established in mind, many of us were relieved to discover that in the Titles XVIII and XIX Government continued to purchase health services from the providers. Indeed, if it wished, the AMA suggested recently, Government could administer these 2 programs entirely through private voluntary health insurance plans, thus making a system uniform for those over 65 and those under 65. The reason for this suggestion was that there were vexatious administrative difficulties, for one thing, and secondly, that an authority (the state agent) can

* Address delivered at the Annual Luncheon of the Medical Society of the District of Columbia at the Hotel Statler-Hilton, Washington, D. C., November 21, 1967.

† Immediate Past President (1966-67) of the American Medical Association. Office: American Medical Association, 535 North Dearborn Street, Chicago, Illinois 60610.

potentially directly influence the provision of health services.

I have been most interested in the fact that it is quite feasible by amendment of the Social Security Act to adjust age or financial criteria of eligibility to receive benefits and for the system to become a national health service, as one finds abroad. At first I thought there would be no effective way to avert this trend of further dependence upon the Federal Government for health services other than for us to show that such services would be of a quality inferior to that anticipated by the people. While I believe such a deterioration of health care to be predictable, I realize that the point is debatable on the ground that it is unwise to transfer anticipation of results in one country to another when the 2 countries are in many ways dissimilar. Nevertheless, without implication of sinister forces at work, practical realities must be faced.

For example: British physicians and the Council of the British Medical Association, after having been promised a raise in per capita remuneration to avert mass resignations from the National Health Service, were forced to realize that "the government is prepared, in times of economic stress, not only to break clear understandings given to the profession regarding its remuneration and conditions of service but—much more important—to jeopardize the whole future of the Health Service."

Recently I have paid more attention to a point that I made first in my Inaugural Address, that to avert the trend toward dependence on government one should help to stimulate local community responsibility for health care. This is a divided responsibility, consumer-provider, peripheral or central, governmental or private, but it has the virtue that no lines of opinion or bias need impede the activity. There is something for everyone to do.

In the recent past I have enjoyed the opportunity of working with men whom I respect on a Task Force of the National Commission for Community Health Services. I believe that our Task Force prepared the basic blueprint for community planning. Since that time I have studied numerous governmental plans for funding, the planning for health services, and for the later implementation of those plans. The numbers and kinds of legislative acts confuse us physicians. For me it is helpful to remember that in these kinds of legislation the primary function of the providers of health service is just that, to provide services as they always have. The funding operation is another

matter and need not necessarily modify the provision of health services, although it may do so. The provider, however, has a role to play in the funding process and that is to be alert that quality does not suffer.

One fortunate aspect of planning by consumers, providers, and Government is that all 3 may be frank in their discussions. We have not always been perfectly frank. We have all spoken at length about objectives, such as quality, quantity, availability and cost, as if these were absolute values that surely could be achieved and equally applied if sufficient money and effort were expended. I would not like to be misunderstood. I value these characteristics of a health care system as highly as anyone, but I realize that there are impediments of all sorts, perhaps not even the majority of them being medical, that force us to be realistic and view them as objectives, as I said. For example, a complete physical examination for each person in the United States, highly regarded as an objective, is probably not feasible, as it is now construed, within the foreseeable future. As a consequence we shall be required to make adaptations in our health care system that will as far as possible equilibrate with this objective. There are people who for reasons of ignorance, superstition, or downright willfulness will not accept health care even when available to them. Generally, hospitals and the medical profession are indicted for the high cost of hospital care. We must be frank to say that the consumer has a responsibility to avoid overreaching his demands for health services merely because a funding program has made them available.

Planning for optimum community health will require organization and direction. While I acknowledge and anticipate the valuable contributions of the many people and multiple agencies, both public and private, that may make significant contributions, I am sufficiently partisan to have recommended that the physicians of the country take the initiative and the leadership when it is agreeable to their collaborators. Health care is not exclusively in the domain of any of the legitimately interested parties. Someone must blend the efforts of all of the separate segments of interest into one program, system or mechanism.

I speak to us as physicians for several reasons:

First, I feel we have a moral obligation to back up with action what we maintain—that we shall see to it that everyone has access to good health care.

Second, while we should not, we cannot afford

to ignore a segment of the population that will be able in the future to sustain a private practice.

Third, we can use the opportunity to emphasize the principle that free care is only for the needy.

Fourth, we must be in at the planning stage of any innovations in the delivery of health care.

Participation by the consumer in these planning efforts will have a salutary effect, I believe. The consumer becomes involved in the preparation for his own health education and health service. His presence will have a tempering effect, I trust, on the dialogue between Government and the providers, Government in all but a limited instance being regarded as a so-called third party or paying mechanism similar to the voluntary health insurance system created by these self-same consumers.

As you know, at the Clinical Convention of the American Medical Association about a year ago I introduced a proposal for establishing medical leadership in the area of health care planning. The initial thrust was toward health care for the poor, because I felt we could embrace this concept more comfortably and could prepare ourselves psychologically for the larger task of organizing health care for the whole community.

Some physicians, I find, respond instinctively and with complete enthusiasm to such a proposition, but not all. Others will become involved, I predict, because of the changes that have taken place in not only medicine itself but in the attitudes, in the appreciation of the value of health services, and in the disappearance of financial impediments to the acquisition of health care in and among the people of this country whom we serve.

My proposal was a relatively brief one:

First, that the local Medical Society make a public commitment . . . put itself and its members on the line as undertaking the establishment of a comprehensive community health care system.

Second, that it take the initiative in drawing together all elements of the community that have a legitimate interest in health care—private and governmental, medical and nonmedical—and mobilize their concerted efforts into an exhaustive study of existing health facilities and existing needs within every geographical, economic and ethnic area of the community.

And third, that it again take the lead, in co-operation with all of the combined elements, in establishing whatever programs are necessary to meet whatever needs are discovered.

I would now take the liberty, in conclusion, of quoting from myself on another occasion in saying

that regardless of what we have done or have not done in the past we must realize today that what we do or what we fail to do, beginning now, will have a profound effect upon the system under which health care is delivered in the future . . . and an equally profound effect upon all of the professionals who are involved in that system of delivery.

Patients Needed at Clinical Center

Bilirubin metabolism. The coöperation of physicians is requested in the referral of patients with hyperbilirubinemia for studies of bilirubin metabolism being conducted by the Metabolism Branch of the National Cancer Institute at the Clinical Center, National Institutes of Health, Bethesda, Md.

Of particular interest are patients with chronic or intermittent unconjugated hyperbilirubinemia, in whom the diagnosis of hemolysis, Gilbert's syndrome, or a posthepatic syndrome is suggested. Patients with conjugated or mixed hyperbilirubinemia (e.g., Rotor's syndrome or Dubin-Johnson syndrome), in whom obvious obstructive or active inflammatory disease has been ruled out, are also needed. A few patients with stable, compensated cirrhosis of the liver may also be accepted for study.

Selected patients will be admitted to the Clinical Center as inpatients for a minimum period of 2 weeks. Isotopic bilirubin clearance and red blood cell life-span studies, as well as dye clearance studies, will be performed. Liver biopsy may be performed in selected situations. Upon completion of their studies patients will be returned to the care of the referring physician, who will receive a summary of findings.

Physicians interested in having their patients considered for admission to these studies may write or telephone Dr. Paul D. Berk, Clinical Center, Room 4-N-117, National Institutes of Health, Bethesda, Md. 20014; telephone: (301) 656-4000, Ext. 65955.

Malignant lymphoma. The coöperation of physicians is also requested in a study of lymphosarcoma and reticulum-cell sarcoma in children and young adults being conducted by the Medicine Branch of the National Cancer Institute at the Clinical Center.

Slides of pathologic material must be submitted for review before patients can be accepted.

Of particular interest are those patients with clinical and histologic features similar to the

(Continued on page 144)

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► HEALTH DEPARTMENT NOTES

Report of Cancer Morbidity

THE STATISTICAL REPORT summarizing data on cases of malignant neoplasms reported to the D. C. Department of Public Health during 1964 was released late last year.

Public law requires that a report be submitted by private physicians, hospitals and institutions to the Director of Public Health for all patients for whom a diagnosis of cancer is made in the District of Columbia regardless of residence.

The purpose of collecting this information is to provide definitive information about the nature and extent of the disease, promote better patient management, evaluate cancer control methods, furnish information for educational purposes, and supply a data base for epidemiologic investigations and clinical research.

As of July 1, 1964, the estimated population of the District of Columbia was 811,000, of whom 429,500 were women and 381,500 were men. There were 496,000 nonwhites and 314,300 whites.

The publication, District of Columbia Central Cancer Registry Morbidity Statistics—1964, reveals that the age-specific cancer case rate for persons over 65 years of age was 1,663.5 per 100,000 population and for those under 45 years of age, 62.3.

Although the majority of the District's population is nonwhite, of the 2,807 resident cases of cancer reported, 1,599 were white and 1,181 nonwhite. In 27 other cases race was not stated.

The number of cancer cases tend to be more heavily concentrated in areas of the city inhabited by older people, particularly west of Rock Creek Park, which has a large number of older white residents. About half (51.5 per cent) the resident white cases reported were 65 years of age and over. Yet, only one third (32.7 per cent) of the nonwhite cases were in this age group. These marked differences, and those in the cancer morbidity rates, are the result of the younger age composition of the nonwhite group. When whites and nonwhites are compared on the basis of case rates in specific age categories, the gap is reduced considerably. All together, more white women than men, or 855 to 744, had cancer. The

reverse was true among nonwhites, more men than women had the disease (641 to 540).

By age, race and sex the report reveals that the age group "65 and over" has greater numbers of newly reported cases of cancer than other age groups. Additional information about resident cases of cancer by age, race and sex appears in table 1.

TABLE 1: Newly Reported Resident Cases of Cancer by Age, Race and Sex, District of Columbia, 1964

Ages	White		Nonwhite	
	Male	Female	Male	Female
65 and over	411	413	239	147
55-64	199	201	185	112
45-54	94	156	137	137
Less than 45	39	82	79	143

About two-thirds of the total cases of cancers in 1964 in the District were reported by hospitals and the balance by private physicians, the National Institutes of Health, other institutions, and from death certificates. Many of the latter were not diagnosed as cancer until after an autopsy was performed.

The sites of the most frequently reported cases among white patients in 1964 were the digestive system and peritoneum, genital organs, and the breast. For the nonwhite they were the digestive system, genital organs, and the respiratory system.

Breast cancer was the most frequently reported type among women. In men, digestive organs and peritoneum headed the list. The largest difference in rates by race for all cases was reported for cancer of the skin. For every case of this cancer site among nonwhites there were 37 cases among the white patients. In cancer of the respiratory system there were 7 cases among men for every case involving women. This 7 to 1 ratio may well be related to a longer history of heavier smoking by men.

Of the reported cases 46.3 per cent were diagnosed while the disease was still restricted to the organ of origin, 35.2 per cent had regional involvement, and 18.6 per cent were found in the stage of remote or diffused metastases.

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JOSEPH T. ENGLISH, M.D. Office: 1200-19th Street, N.W. Born in Philadelphia, Pa. Medical degree, Jefferson Medical College, 1958. Specialty: Psychiatry.

WALTER HIGHMAN FANBURG, M.D. Office: 5415 Connecticut Avenue, N.W. Born in Orange, N. J. Medical degree, Tulane University, 1962. Specialty: Psychiatry.

WILLIAM STEVEN GILBERT, M.D. Office: 2300 K Street, N.W. Born in New York City. Medical degree, Albert Einstein College of Medicine, 1961. Specialty: Ophthalmology.

BETTY HUSE, M.D. Office: 4712-32nd Street, N.W. Born in Norfolk, Nebr. Medical degree, Cornell University, 1933. Specialty: Psychiatry.

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CAP HILL OLIVER, JR., M.D. Office: George Washington University Hospital. Born in Ranger, Texas. Medical degree, University of Texas, 1951. Specialty: Internal Medicine (Rheumatology).

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GLEN AMOS BROUGH, M.D. Office: Main Post Office. Born in Birmingham, Ill. Medical degree, University of Illinois, 1924. Specialty: Orthopedic Surgery.

THOMAS MONTAGUE FULCHER, M.D. Office: 200 Little Falls Street, Falls Church, Va. Born in Amherst, Va. Medical degree, University of Virginia, 1956. Specialty: Thoracic and Vascular Surgery.

LEONARDO COSTALES MAGUIGAD, M.D. Office: Eastern Shore (Maryland) State Hospital. Born in the Philippines. Medical degree, St. Tomas University, Manila, 1957. Specialty: Psychiatry.

BENNIE ARTHUR MOXNESS, M.D. Address: 4903 Chevy Chase Blvd., Chevy Chase, Md. Born in Brandon, Minn. Medical degree, Georgetown University, 1925. Specialty: Preventive and Administrative Medicine.

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HARRY DANIEL TUNNELL III, M.D. Hospital: Freedmen's. Born in Philadelphia, Pa. Medical degree, Howard University, 1955. Specialty: General Surgery.

Report of Conference on Food and Drug Contaminants and Related Problems

THE U. S. Food and Drug Administration and the Food and Drug Law Institute held their Eleventh Annual Conference, November 27, in Arlington, Va. A spirited but generally good-natured exchange of points of view characterized this meeting.

The program was arranged so that presentations by spokesmen for each group were alternated. Food producers charged that press releases concerning alleged violations prior to fair court hearings imposed severe economic penalties unjustly. They stated further that the threat of such publicity coerced them into following F.D.A. directives even when they believed the measures "suggested" were not appropriate. These complaints were received with a sympathetic ear, and producers were told to stand their ground if they believed a directive was not justified.

Dr. Kenneth Lenington discussed a program to reduce salmonella outbreaks. There are over 20,000 reported salmonella cases a year. Sources of trouble are spray-dried milk, animal products such as thyroid tablets, smoked fish, and, for some reason not understood, chocolate candy. A by-product of control of salmonella and *E. coli* is reduction in other intestinal organisms in food products, such as *Clostridium perfringens*, *Vibrio parahaemolyticus*, and the over 100 viruses which

may occur in the human digestive tract. When the organism has been found, control is best achieved by voluntary recall of the product by the manufacturer.

Dr. Morris Yakowitz, of Smith Kline & French, pointed out that any test for drug purity depends on the adequacy of the sample taken. The total manufacturing process is the best safeguard because even multiple samples may let a small amount of contaminated material escape detection if air pockets develop in an autoclave. New packaging methods may substantially alter the stability of even old, well-known drugs. An instance was cited of a nitrate ester which migrated from its tablet through a plastic coating into an adhesive which binds the plastic to an aluminum foil outer wrap. As a result the tablets became inert. Constant vigilance is therefore necessary with even apparently trivial changes in manufacturing or handling of drugs.

Dr. R. Keith Cannon discussed the National Research Council's study panel on efficacy of new drugs and pointed out the need to revise drug package inserts as new information is accumulated; many are very much out of date.

ELOISE W. KAILIN, M.D.
Member, Committee on
Environmental Health



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1. Bradley, J. E., *et al.*: *J. Pediat.* 38:41 (Jan.) 1951.
2. Bradley, J. E.: *Mod. Med.* 20:71 (Oct. 15) 1952.
3. Crunden, A. B., Jr., and Davis, W. A.: *Am. J. Obst. & Gynec.* 65:311 (Feb.) 1953.



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this issue: the cold in pregnancy...

the cold in pregnancy

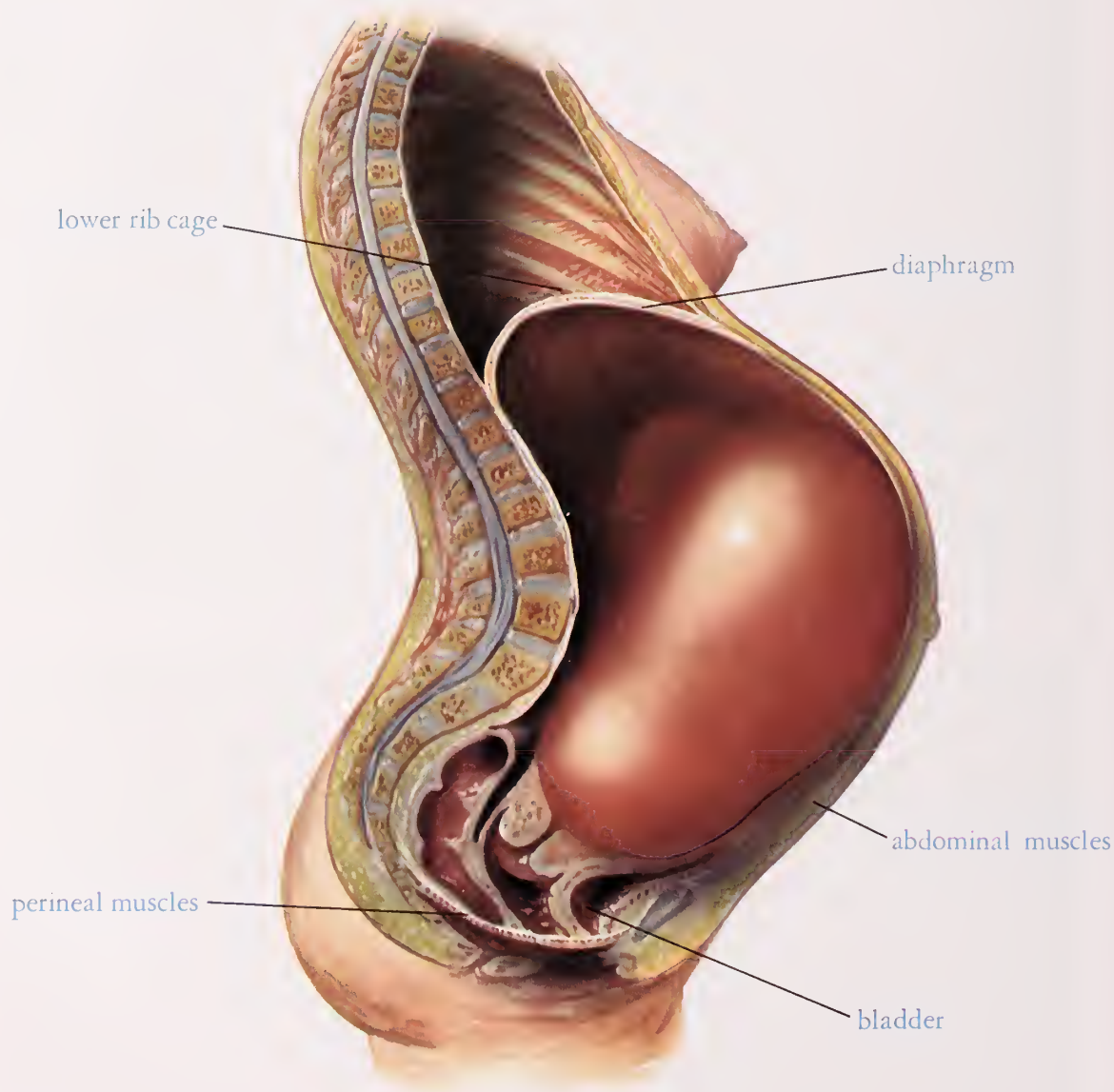
Frederick W. Goodrich, Jr., M.D.

Senior Obstetrician and Gynecologist, Lawrence and Memorial Hospital, New London, Connecticut

Since pregnancy and the common cold are both ubiquitous, it is not surprising that they often occur at the same time in the same patient. Incidence figures are hard to come by, but the chances are very good that any given pregnant woman will have a cold at some time during the nine months of her gestation. When she does, she will tell you that it is the worst cold she ever had. It seems to last longer and the symptoms are more distressing than they are in the non-pregnant.

For purposes of this discussion, the common cold is considered to be the well-known symptom complex which includes sore throat, stuffy nose, and a cough. Febrile states or extension of the disease process into the lower respiratory tree are not part of the common cold and will not be included in this discussion.

the clinical picture of a cold in pregnancy can be confused by a long-known physiological phenome-



non. Kiesselbach's area in the nose (on the anterior part of the nasal septum above the intermaxillary bone) becomes engorged, apparently due to hyperemia induced by the increased estrogen level which accompanies pregnancy. The amount of congestion can vary in degree from woman to woman. Some have very little congestion, others will have occasional nosebleeds from this area, still others will have symptomatic congestion to the degree that they will complain of having a "chronic" or constant cold.

Less well recognized is the occurrence of this type of hyperemia in any part of the nasopharyngeal mucosa, again in varying degree. Such swelling often produces a postnasal drip which, the patient will state, is present only when she is pregnant. Patients who do not have symptomatic congestion ordinarily, will find that when they do get a cold, the symptoms last much longer than those of a cold usually do. Occasionally, this hyperemia is responsible for closure of the medial end of the Eustachian tube; such patients will complain of "plugging" of the ears. Inspection of the ear drum will show a depression which confirms the presence of Eustachian closure rather than wax in the canal which is the patient's diagnosis. Symptoms related to this physiological congestion are more apt to occur in heavier smokers or those who have a history of allergic rhinitis, just as are the symptoms of the common cold. And when the cold does occur in pregnancy, the symptoms are worse because of the underlying congestion.

The pregnant woman with a cold is miserable for other reasons, dependent somewhat on her parity and the length of her gestation. As parity increases, so also does the relaxation of the abdominal and perineal musculature. The uterus, lying against a slack abdominal wall, and bearing down on relaxed perineal muscles, acts like a piston when the patient coughs, sneezes, or even blows her nose, pushing down on the bladder. Stress incontinence during colds is almost the rule.

As the length of gestation increases, so does the size of the uterus. As it grows, it pushes the abdominal contents above it and elevates the diaphragm. This results eventually in a lateral displacement of the lower rib cage, often to a point at which the patient will complain of soreness in this area. If such a

(Concluded on following page)

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patient has a cold, the coughing and sneezing will exaggerate this soreness. The diaphragmatic restriction caused by the enlarging uterus also makes breathing more difficult, particularly when the patient lies down. A cold compounds this difficulty.

Treating a cold in pregnancy requires two additional considerations. The patient should be told that the symptoms may last longer lest she become discouraged, and she should be reassured that the treatment will not damage the fetus. Although there are still some women who seem blissfully ignorant regarding matters of health (and these need to be cautioned not to take medication recommended by friends), most of our maternity patients are aware of the thalidomide tragedy. These women need constant reassurance that the symptoms of a cold can be treated, and that the medication is safe. Fortunately, many of the drugs which are of benefit have been in use long enough and widely enough so that such a statement can be offered. Occasionally one encounters a patient who is so anxious to avoid medication that she is extremely reluctant to take anything at all. Since cold is self-limited, it seems reasonable enough to give such a patient the choice and not to force drugs on her if she is obviously afraid of taking them.

the most distressing symptom of the common cold is the nasal congestion. This can be mitigated by the use of a decongestant which will help reduce the postnasal drip and the coughing caused by it. The kind of a cough which is described as a "tickling" in the throat and which is apt to occur when the patient goes to bed is usually due to nasopharyngeal congestion rather than inflammation in the lower respiratory tract.

There are many cough mixtures available. Most contain an antihistamine, a decongestant, and a cough "suppressant." Should cough suppression be desirable, it is important to remember not to use both a decongestant tablet and such a cough mixture as the patient would be getting a double dose of the decongestant. With some patients, the placebo effect of a cough syrup may be important and a liquid preparation might be substituted for an oral tablet.

For a sore throat, candy drops or lozenges at frequent intervals are soothing. It is not only unneces-

sary but unwise to use antibiotic lozenges or drops. The use of antibiotics in an uncomplicated cold is contraindicated and should be scrupulously avoided.

In summary, a cold in pregnancy is more severe and longer lasting. The treatment of the symptoms with local and systemic decongestants will make the patient more comfortable.

apparently the cold is so common in pregnancy that it has received very little attention in the literature. References are almost non-existent and the few which are available add little to the common knowledge, are out-dated, or are not helpful. Thus the usual bibliography is not appended.



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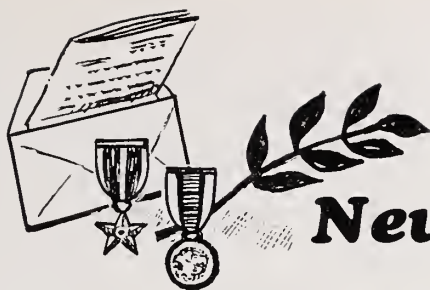
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News & Personals

Summary of Executive Board Actions

THE EXECUTIVE BOARD met twice during the month of December.

Proceedings of December 4 Meeting

Dinner for the Board members was served at 6:30 p.m. in the Exhibit Hall of the Medical Society. Dr. Karl C. Corley, Chairman, presided at the meeting. Present were: Drs. Frank S. Bacon, C. Willard Camalier, Henry D. Ecker, Raymond T. Holden, Margaret M. Kenrick, Edward W. Nicklas, Paul R. Wilner, and Mr. George Cooley, Secretary. Present by invitation were Mr. Charles F. Suter, of the Prudential Insurance Company, and Dr. J. Rogers Young, Chairman of the Committee on Occupational Health. The meeting was called to order at 7:15 p.m.

Minutes of the meeting of October 23, 1967 were approved as mailed.

Committee Meetings: The Secretary reported that the following meetings had been held since the last meeting of the Board:

- October 24 Nominating Committee
- 24 Committee on Davidson Lecture
- 25 Board of Credentials
- November 1 Regional Medical Program Policy Committee
- 2 Committee on Occupational Health
- 2 Traffic Committee
- 7 Committee on Medicolegal Problems
- 8 Fee Review Committee
- 15 Board of Credentials
- 19 Annual Business Meeting
- 20-21-22 Annual Scientific Assembly
- 29 Medical-Dental Bureau Research Foundation

Board of Credentials: On recommendation of the Board of Credentials, 14 applicants were elected to Active membership, 7 to Associate membership, and 3 to Resident-Intern membership. Their names appear on page 130. Approval was also given to the following changes in membership status:

Transfer

Active to Special: Palmer Abraham

Resignation

Associate: Mark H. Lepper

Retirement Program: Mr. Suter, representing the Prudential Insurance Company's Retirement Program, was present to discuss briefly the advantages of its program over that of the AMA's Program and to answer any questions. He pointed out that there was no deadline for joining the Program, except on or prior to the end of any calendar year. In other words, a young physician could join any time and not just in 1968. For this year, however, a doctor must join prior to December 21, 1967 to get full tax advantages.

He pointed out that there is a tax advantage for almost any physician, the amount depending on the earnings of the physician.

He reported that physicians must include all full-time employees who have been on the payroll for 3 years and worked 20 hours or more a week. A physician, he said, does not have to contribute each year for himself but would have to do so for his employees.

After Mr. Suter left there was considerable discussion, the Secretary pointing out that almost 200 physicians had returned the questionnaire form indicating an interest in the Retirement Program.

A motion was made and carried that the Society co-sponsor the proposed Retirement Program under the Prudential Insurance Company in co-operation with the Virginia Dental Society, which has a plan already approved by the Internal Revenue Service.

It was understood that such co-sponsorship did not involve the Society in any financial obligation and would make it possible for members to participate prior to January 1, 1968.

Suit re Polio Program: The Secretary reported that the plaintiff has "voluntarily dis-

missed, with prejudice, her law suit against Pfizer & Company and the Medical Society of the District of Columbia."

Resignation of Dr. Camalier from the Board of Trustees of Medical Service of D. C.:

The Secretary reported that as of November 1, 1967 Dr. Camalier had resigned as President and a member of the Board of Trustees of Medical Service.

Workmen's Compensation Fee Schedule:

Dr. Young was present to review the details of a conference with representatives of the Board of Trade, who represented the employers, and with representatives of several insurance companies. He reported in some detail the problems encountered in Workmen's Compensation in which "clinic" facilities handle much of the volume of routine compensation office visits. He urged that the Executive Board approve the agreed upon fee changes made by the Committee and the Board of Trade.

There was considerable discussion; most members of the Board questioned present practices under Workmen's Compensation and the fact that the agreed upon fees for home, office, and hospital visits were below those that would be arrived at by applying the Relative Value Scale factor for Medical Service.

The Board voted not to accept the recommendation of the Committee on Occupational Health and the Board of Trade but to refer this matter back to the Committee for reconsideration and for the development of a more realistic fee schedule based on the Relative Value Scale.

Annual Scientific Assembly: The Secretary distributed a report on the ASSEMBLY developed by Mr. Fred Trust. It was observed from the report that the attendance had fallen off considerably as compared with the 1965 ASSEMBLY and that the commercial exhibitors were unhappy with the attendance and with the lack of interest of physicians in their exhibits. Only 15 of some 40 exhibitors who sent in reports indicated that they would recommend returning in 1968. It was decided to defer action on this matter at this meeting and to place it on the agenda again for either December 18 or early in January.

Letter from Mrs. Yater re assisting foreign medical students: This information had been sent to the Board members earlier. A motion was made and carried to refer this information to the Committee on Liaison with Hospitals with a request that the Committee report back to the Executive Board.

Association of Residents and Interns: In transmitting information on this organization to the Board members the covering letter requested "that it be studied as to whether the action involved constituted questionable behavior and, if so, that proper action be taken." The Board voted to refer this matter to the Committee on Medical Ethics and Professional Conduct for its review and reaction and for recommendations to the Board.

Committees for 1968: The list of committee selections by Dr. McCune was reviewed briefly and approved. The Committees on Postgraduate Education, Occupational Health, and Blood Banks were omitted until further review is made.

Other Business

1. President Ecker reported on a request from Sursum-Corda, Inc., requesting assistance in financing health facilities for the tenants of its housing project. There was some discussion concerning past policies on such matters. It was agreed that the President be authorized to contact the President of Sursum-Corda, Inc. and explain to him that it is not the policy of this Society to donate to organizations from the dues of its members but to leave such contributions to each individual member.

It was pointed out that the National Medical Association has a Federal grant through which it can establish health units in the District and that the need for such units is now being studied by the Health Facilities Planning Council.

2. Dr. Holden brought to the meeting a plaque commemorating the Society's 150th anniversary which was presented to him, as a representative of the Society, by the delegates of the Medical Society of the State of New York at the AMA Clinical Session in Houston, Texas.

The President was requested to write both the Medical Society of the State of New York and the American Medical Association expressing the Society's appreciation for this recognition of our 150th anniversary by both organizations.

3. Dr. Wilner asked to discuss briefly the law suit between Group Hospitalization, Inc. and the Washington Hospital Center.

There being no further business, the meeting was adjourned.

Proceedings of December 18 Meeting

In the absence of Dr. Corley, Chairman, Dr. Nicklas, Chairman-elect, presided at the meeting. Present were Drs. Bacon, Camalier, Ecker,

Holden, Kenrick and Wilner, and Mr. Cooley, Secretary. The meeting was called to order by Dr. Nicklas at 7:40 p.m.

The minutes of the December 4, 1967 meeting were approved.

1968 Committees: Dr. McCune reviewed a number of committee appointments carried over from the previous meeting. The appointees to the following committees were approved: Liaison with the Clergy, Blood Banks, Occupational Health, Continuing Education (formerly Postgraduate Education), and the following new Ad Hoc Committees: Interdisciplinary Committee on Drug Dependency, Committee on Medical Licensure, Committee on Air Pollution, and Committee on Aviation Medicine.

Co-sponsorship of Program with N.E.A.: The Secretary reported that he had approved co-sponsoring a program with the National Education Association on health and athletics. The Board confirmed the action taken by the Secretary and voted to forward all necessary information to the Committee on Medical Aspects of Sports.

Corporate Practice of Medicine: A letter from the Section on Pathology and Laboratory Medicine called attention to 2 physician-run laboratories which appear to be engaged in the corporate practice of medicine or have organized such practice in a manner violating the ethics of the practice of medicine in the District of Columbia. The Section asked that the situation be investigated by the Executive Board of the Medical Society of the District of Columbia. The Board voted to refer this investigation to the Committee on Medical Ethics and Professional Conduct.

Committee on Relative Value Study: The Board voted to accept the recommendations of the Section on Otolaryngology, as approved by this Committee, with proper corrections and with terminology to be cleared with the Committee Chairman.

It was voted that the changes regarding psy-

chiatry, as recommended by the Committee, be referred back to the Committee for further definition of items 9860-9873 and that such further definition be included in a revision of the Relative Value Scale.

Other Business

1. Dr. McCune referred to a letter from Dr. Young urging reconsideration of and approval of the proposed changes in the Workmen's Compensation Fee Schedule which the Executive Board had not approved at its last meeting.

After considerable discussion a motion was made and carried that this matter be referred to the newly appointed Committee on Occupational Health for further study and that until a report is made by this Committee each case be considered on an "A and A" basis.

2. Dr. Holden read his report on the Clinical Session held in Houston. The Board voted to accept the report and to publish it in the MEDICAL ANNALS (see page 121).

3. Dr. Camalier reported briefly on present attitudes as reflected by members of the House of Delegates on "usual and customary fees" and also on the deteriorating relationships with Blue Shield in various parts of the country. He pointed out that the House of Delegates had requested the National Association of Blue Shield Plans to reconsider an action which provided for approval of prepayment plans not endorsed by a Medical Society.

There was some discussion of this. Dr. Ecker noted that a committee had been appointed at the last meeting of the Metropolitan Area Medical Council to study Blue Shield in Washington and that he was a member of that committee.

4. Dr. Ecker referred to a letter from the Washington Academy of Sciences requesting funds. It was decided that the usual reply be made to that letter, i.e., that Society dues are not used

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for that purpose but that individual members are urged to support such organizations.

5. Dr. Ecker also read from a letter from Dr. Thomas E. MacNamara, Chairman of the Section on Anesthesiology, concerning unlicensed physicians who seem to constantly be in a "training" capacity. Dr. MacNamara asked whether there are any limits to the medical responsibility these physicians may ethically be given. The Board authorized the President to refer this to the proper committee.

6. Dr. McCune brought up the question of a SCIENTIFIC ASSEMBLY for 1968. He said he had been in contact with the Managers of the Mayflower and Washington Hilton Hotels in regard to possible dates. It was his opinion that an ASSEMBLY should be held, and he stated the following dates are presently open: December 2-4 at the Mayflower and November 10-13 and December 15-18 at the Washington Hilton.

There was some discussion concerning alternating between a meeting in the District and one at a resort such as Greenbrier. A motion was made and carried to plan a SCIENTIFIC ASSEMBLY for the fall of 1968 and also to consider plans for 1969.

7. Dr. McCune reported that the pastor of the Church of the Pilgrims is anxious to have a physician present when they have meetings of "hippies." It was agreed that this group of young people have many physical problems and may become a health hazard to the community because of such diseases as tuberculosis and venereal diseases. It was suggested to Dr. McCune that he consider inviting the pastor of this church to a future meeting of the Executive Board.

The next meeting of the Executive Board was scheduled for January 22, 1968.

There being no further business, the meeting was adjourned.

MEETINGS

The 14th Annual Sectional Meeting for Doctors and Nurses, sponsored by the American College of Surgeons, will be held in Williamsburg, Virginia, March 11-13, 1968. Nurses and Fellows of the College may register at no charge. Non-Fellows will be assessed a registration fee of \$15.00. Program details and official hotel reservation forms may be obtained from Mr. T. E. McGinnis, American College of Surgeons, 55 East Erie Street, Chicago, Ill. 60611.

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The American Medical Association will sponsor the **Second National Congress on Socio-Economics of Health Care**, March 22-23, at the Palmer House in Chicago. There is no registration fee. A copy of the program may be obtained by writing to the AMA, Division of Socio-Economic Activities, Department of Health Care Services, 535 North Dearborn Street, Chicago, Ill. 60610.

The Eleventh Annual Joint Cardiac Symposium of the Heart Association of Northern Virginia, Inc., and the Washington Heart Association will convene on Wednesday, April 10, in the Persian Room of the Marriott Twin Bridges Motor Hotel, Washington, D. C. on U.S. Route 1.

Guest speakers will be: Dr. J. Willis Hurst, Professor and Chairman, Department of Medicine, Emory University School of Medicine, Atlanta, Ga.; Dr. Dwight C. McGoon, of the Mayo Clinic, Rochester Minn.; Dr. Ray W. Gifford, Jr., of the Cleveland Clinic Foundation, Cleveland, Ohio; and Dr. Demetrio Sodi-Pallares, Director, Department of Electrocardiography, Instituto Nacional de Cardiologia de Mexico.

Washington physicians are cordially invited to attend.

► GENERAL NEWS

At the request of the Vietnam government, an **ophthalmology program** was started at Vinh Long Provincial Hospital in the Delta south of Saigon by Dr. W. Conrad Stone, of Roanoke, Va. Dr. Charles H. Moseley, Director of the AMA Volunteer Program, is asking that 12 ophthalmologists volunteer for the program during 1968 in order to maintain 2 in Vietnam at all times. The eye program, Dr. Moseley explained, is designed to provide care, preventive medicine, improvement in the administration of the Vinh Long Ophthalmology Service, and teaching of Vietnamese medical students. The Vietnam Ministry of Health has agreed to assign senior medical students to residency training at the eye clinic, which is the only one of its kind in the country.

Physicians interested in the eye program can write to Dr. Moseley at the AMA, 535 North Dearborn Street, Chicago, Ill. 60610.

The Medical Library at D. C. General Hospital is making an appeal for back copies of medical journals. Physicians in the Washington Metropolitan Area, many of whom have taken part of their training at D. C. General, are urged to donate their unwanted medical journals to the library. Almost 200 interns and residents are enrolled at D. C. General Hospital, as well as senior medical students from the affiliated University medical schools of George Washington, Georgetown and Howard. Most of these doctors and students rely on the services of the library in their training. Medical journals should be addressed to Medical Library, D. C. General Hospital, 19th Street and Massachusetts Avenue, S.E., Washington, D. C. 20003.

Professor Paul Ramsey, Professor of Christian Ethics at Princeton University, has been appointed to a Joseph P. Kennedy, Jr. Foundation Visiting Professorship of Genetic Ethics in the Department of Obstetrics and Gynecology at the Georgetown University School of Medicine. Under the terms of a grant given to Georgetown by the Foundation, Professor Ramsey will spend 2 semesters in the Medical School, from February 1 through July 31, both in 1968 and 1969.

Professor Ramsey has authored many publications in the field of Christian ethics and is internationally recognized as one of the foremost Protestant ethicists. He will focus his studies on ethical problems arising from man's increased ability to control his environment. Many of these problems will involve the general areas of genetics, organ transplantation, medical experimentation, and problems surrounding human life in its beginning and at its end. In addition to his research, Professor Ramsey will participate in the teaching of a course in ethics for medical students.

The eleventh guide in the series, "**Guides to the Evaluation of Permanent Impairment**," developed by the AMA Committee on Rating of Mental and Physical Impairment, is concerned with "The Reproductive and Urinary Systems." This guide, like all the others in the series, has been designed primarily for use by physicians, but it is also of interest and use to all concerned with the medical, administrative, or judicial aspects of programs for the disabled. A limited number of copies may be obtained, without charge, upon written request to the Committee on Rating of Mental and Physical Impairment, 535 North Dearborn Street, Chicago, Ill. 60610.

Mr. Thomas Sadler, who has served as Administrator of the Washington Clinic for the past 5 years, has been employed by the Medical Society of D. C. as Assistant to the Director, Mr. George W. Cooley. Mr. Sadler, a native of Raleigh, N. C., received his B.A. degree in Business Administration from Duke University in 1941. During World War II he served for 3 years with the U. S. Army Transportation Corps. Prior to his services at the Washington Clinic, he was Assistant Administrator at the Washington Hospital Center. He succeeds Mr. Fred Trust, who has been with the D. C. Medical Society for the past 5 years and now is heading up the Doctors Automated Billing Service and will remain with the Society to handle the SCIENTIFIC ASSEMBLY and several special committee projects.

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Updated lists of AMA-approved or accredited schools, revised to September 15, 1967, are now available from the Department of Allied Medical Professions and Services, AMA, 535 North Dearborn Street, Chicago, Ill. 60610. Included are AMA-approved schools of cytotechnology, inhalation therapy, X-ray technology, physical therapy and medical technology, approved courses in occupational therapy, and accredited schools for medical record librarians and medical record technicians.

Dr. Robert E. Byrne, of Arlington, is the new President of the **Arlington County (Virginia) Medical Society**. Taking office with him are Dr. Robert H. Gruver, President-elect, and Dr. Arthur I. Sims, Vice President.

Dr. Byrne is an Associate member of the D. C. Medical Society.

Several nearby suburban hospitals have elected **new medical staff officers**.

Dr. John E. Cassidy is Chairman of the medical staff of Suburban Hospital in Bethesda, Md. Dr. Albert S. Bright will serve as Vice Chairman and Dr. Robert R. Cross as Secretary-Treasurer.

Dr. Stephen J. Sheehy, Jr., has been elected President of Arlington Hospital's medical staff. Dr. Henry L. Bastien was elected Vice President and Dr. Joseph O. Romness, Secretary.

Dr. John P. Haberlin is the new President of the medical and dental staff of Holy Cross Hospital in Silver Spring. He is a Past President of the Montgomery County Medical Society.

Drs. Bright, Sheehy, Bastien, Romness, and Haberlin are Associate members of the D. C. Medical Society; Dr. Cross is an Active member.

► OBITUARIES

James Alonzo Gannon, M.D.

(1884-1967)

WITH THE DEATH of Dr. James A. Gannon, December 12, 1967, the career of one of Washington's more colorful and widely known physicians came to a close. He had resided at the Cosmos Club since 1960.

He was born in New York City, March 8, 1884, to Frank S. and Marietta Burroughs Gannon. His father was Vice President and General Manager of the Southern Railway System. The family came to Washington when Dr. Gannon was 13 years old. He attended St. John's Preparatory School and graduated in medicine from Georgetown University in 1906. He was a student intern at Casualty Hospital from 1903 to 1906 and interned at Georgetown Hospital from 1906 to 1907, when he began his private practice.

In 1911 Dr. Gannon was appointed by the City as Physician to the Poor. Three years later he was appointed Chief of Staff and Chief Surgeon at the old Washington Asylum, which later became Gallinger Municipal (now D. C. General) Hospital, serving from 1914 to 1928. He was also Dean of Gallinger's Capital City Training School for Nurses from 1914 to 1928.

He was on the faculty of Georgetown University School of Medicine and attending surgeon at Georgetown University Hospital from 1919 to 1932. He was Chief Surgeon for the Washington and Old Dominion Railroad from 1908 until he retired from active practice about 10 years ago. His private offices and residence for many years were at 1915 Biltmore Street, N.W.

He served as a member of the District Board of Education from 1940 to 1952. He had his own radio program, "Tell me, Doctor," in 1949 and 1950.

For his civic and teaching work, Dr. Gannon received numerous awards, including the Certificate for Meritorious Service from the Medical Society of the District of Columbia in 1954 and the Meritorious Award from the Georgetown Clinical Society the same year.

Dr. Gannon was one of the few remaining physicians who held membership in both the Medical Association of the District of Columbia and the Medical Society of the District of Columbia, joining both in 1908. For the Society he had served both as member and Chairman of its Executive Committee. He became a Life member of the

► PERSONALS

At the 61st Annual Meeting of the Southern Medical Association in Miami Beach, Florida, November 13-16, 1967, three Washington physicians were elected Sectional Chairmen: **Dr. James J. Feffer**, Section on Medicine; **Dr. Alejandro F. Castro**, Section on Proctology; and **Dr. Thomas F. McDermott**, Section on Anesthesiology.

The Chairman and other officers of each of these Sections will be responsible for arranging the program of their own Section for presentation at the 62nd Annual Meeting of the Association, which will be held in New Orleans, November 18-21, 1968.

Society in 1949. He was a Fellow of the American College of Surgeons and a member of the American Medical Association, the Hippocrates-Galen Medical Society, the Washington Academy of Surgery (President, 1944-45), the Pan American Medical Society, the Georgetown Clinical Society, and the Washington Medical and Surgical Society. He was a member of the Oldest Inhabitants of the District of Columbia, the Chevy Chase Club, and the Blue Ridge Rod and Gun Club.

Dr. Gannon had contributed many articles to medical journals. He had also written many articles on the practice of medicine in the early days of Washington. He himself was the subject of a delightful interview by Eleanor Nealon, the daughter of Dr. Stephen W. Nealon, Jr., of Washington, which was published in *The Washingtonian* in August 1967 under the title: "The Automobile Doctor: What it was like a long time ago."

Dr. Gannon leaves 2 sons, Dr. James A. Gannon, Jr., of 2822 Bisvey Drive, Falls Church, Va., an Associate member of the Medical Society, and Robert I. Gannon, of 875 North Longfellow Street, Arlington, Va.; and a daughter, Mrs. Edward J. Detgen, of 7400 Helmsdale Road, Bethesda, Md. His brother, the Reverend Robert I. Gannon, S.J., formerly President of Fordham University, is now retired and living at the St. Ignatius Retreat, Manhasset, L. I., New York.

Frederick Aloysius Joseph Geier, B.S., M.D.

(1898-1967)

DR. FRED A. J. GEIER, an internist who had practiced in Washington since 1926, died suddenly, December 11, 1967 at his home, 4948 Lowell Street, N.W.

Dr. Geier was a Washingtonian, born August 6, 1898. A graduate of Old Central High School, he received both his undergraduate and medical degrees from George Washington University, the latter in 1925. He was an intern and resident physician at old Emergency Hospital. His postgraduate training in internal medicine, with particular emphasis on gastroenterology, was acquired over a number of years at the University of Pennsylvania, University of Chicago, University of Minnesota, and Duke University.

He was Clinical Instructor in Internal Medicine at George Washington University from 1926 to 1936, and he held the same position at Georgetown University from 1936 to 1946. He served as Chief of Medicine at Doctors Hospital from 1955 to 1963, when he was named Director Emeritus of the Department of Medicine.

From 1926 to 1943 he was associated in the practice of gastroenterology with Dr. William Earl Clark and continued practice in his own offices at 1801 Eye Street, N.W. For a number of years he had been associated with Dr. Robert V. Choisser.

In 1965 Dr. Geier spent 2 months at Thu Khoa Nghia Hospital in Can Tho, South Vietnam, under Project Vietnam, sponsored by the Agency for International Development. In addition to the medical services he rendered civilians at the hospital, he lectured to the doctors and nurses attached to the hospital.

Dr. Geier had been an Active member of the Medical Society of the District of Columbia since 1928. He was a Fellow of the American College of Physicians, a member of the American Medical Association, the Southern Medical Association, and the American Society of Internal Medicine. He was a founding member of the American Society for Gastrointestinal Endoscopy, and a member and Past President of the International Medical Club of Washington and the George Washington University Medical Society. He also belonged to the Chevy Chase Club.

He leaves his wife, Mrs. Muriel Schaefer Geier, and a son, Paul H. Geier, of Potomac, Md.

Patients Needed at Clinical Center (Continued from page 127)

malignant lymphoma of African children (Burkitt tumor). These patients generally present with jaw, ovarian, or abdominal masses. The purpose of this study is to conduct immunologic, virologic, pathologic, and chemotherapeutic studies.

Suitable patients will be admitted to the Clinical Center in Bethesda, Md., or to one of the participating medical centers. Physicians who wish to have their patients considered for the study may write or telephone Dr. Paul P. Carbone, Clinical Center, National Institutes of Health, Building 10, Room 12-N-226, Bethesda, Md. 20014; telephone: (301) 656-4000, Ext. 64251.

The Medical Society of the District of Columbia

1968

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Abbott Antihypertensive Building Blocks

A simplified approach
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Enduron: (methyclothiazide) A basic building block for mild hypertensives



Excellent day-long Na^+ output, yet easy on the K^+

Enduron provides an excellent starting therapy. Your patient's sodium excretion is greatly enhanced. Yet potassium loss is low.

The therapeutic action is smooth, and persists for a full 24 hours. With Enduron you can prescribe convenient once-a-day dosage without skimping your patients on day-long thiazide effectiveness.

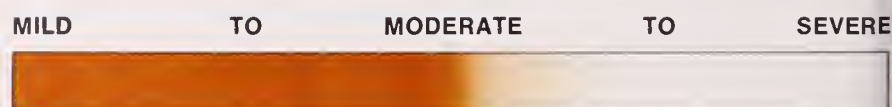
Of course, as with all thiazides, supplemental dietary potassium should also be considered.

Use Enduron as a basic therapy in patients with mild to moderate hypertension. A single 5-mg. tablet each day is ample in most cases.

Once a day, every day

ENDURON

METHYCLOTHIAZIDE



See Brief Summary on final page of advertisement

Enduronyl: Its deserpidine component adds response in moderate hypertension



Less frequent rauwolfia side effects than with reserpine

When you wish to build further response, consider shifting to Enduronyl.

Enduronyl adds a building block of *deserpidine*. This is a purified rauwolfia alkaloid available only from Abbott. It adds good antihypertensive and tranquilizing activity. Yet its incidence of untoward effects, particularly lethargy and depression, is lower than with reserpine.

Enduronyl is available plain or Forte. The latter provides its variation where most helpful, by doubling the deserpidine.

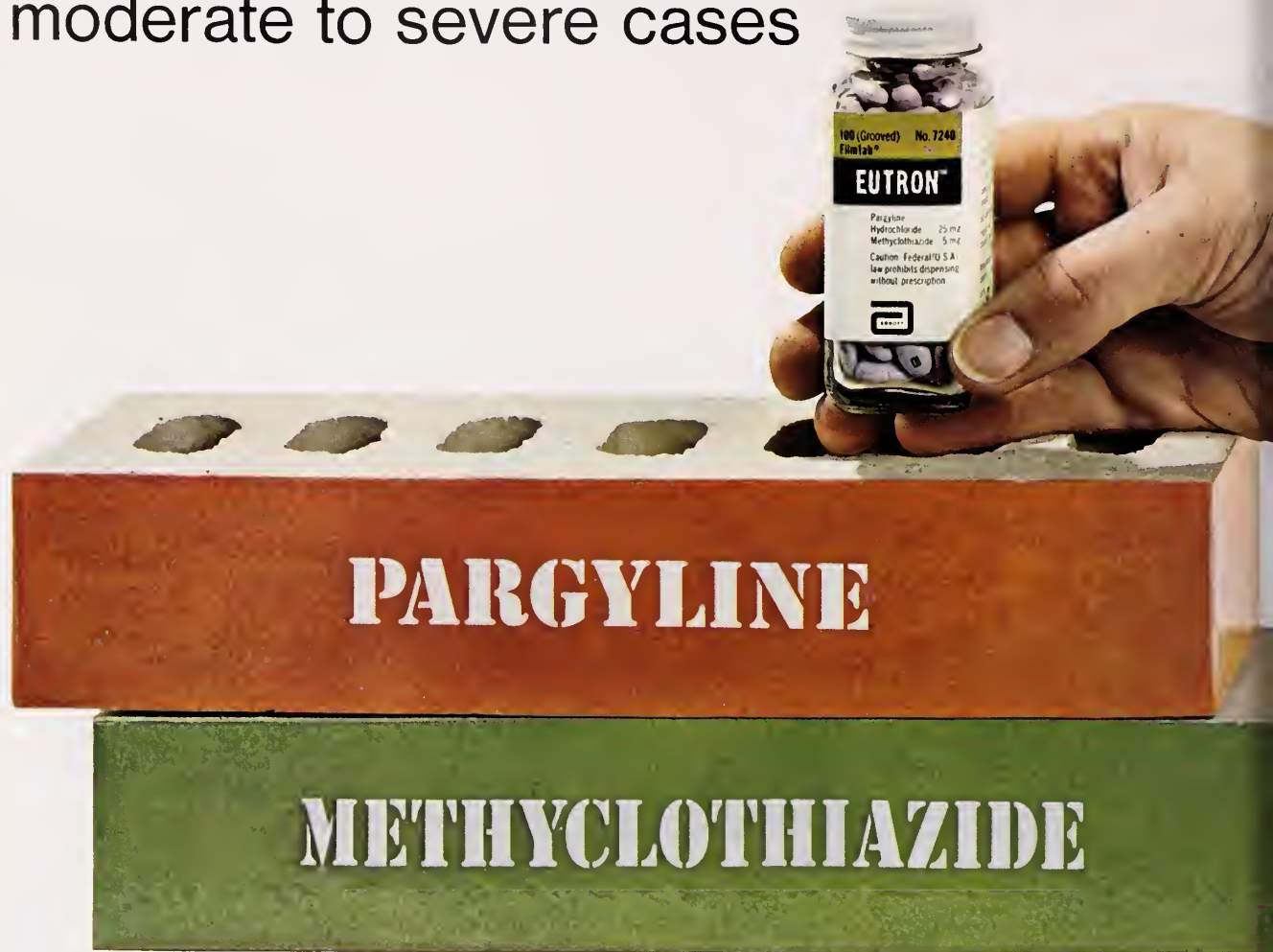
Use Enduronyl for patients throughout the broad range of mild to moderately severe hypertension.

Once a day, every day
ENDURONYL
METHYLOTHIAZIDE 5 mg. with
DESERPIDINE 0.25 mg. or (FORTE) 0.5 mg.



See Brief Summary on final page of advertisement

Eutron: A unique combination for handling moderate to severe cases



Affords almost uniform diastolic reduction in all body positions

Eutron lowers diastolic pressures nearly equally, whether your patient is standing up or lying down.

Thus, in clinical trials, average *standing* diastolic readings were reduced from 112 pre-treatment to 90 post-treatment; *sitting* from 115 to 95; and *recumbent* from 112 to 94.

Note that following Eutron, the diastolic reductions were nearly alike in all three body positions.

Use Eutron for managing your moderate to severe cases. Its building blocks enhance each other; hence lesser doses often suffice.

Once a day, every day

EUTRON™

PARGYLINE HYDROCHLORIDE 25 mg.
with METHYCHLOTHIAZIDE 5 mg.

MILD TO MODERATE TO SEVERE



See Brief Summary on final page of advertisement

801034

ENDURON[®] | ENDURONYL[®]

METHYLOTHIAZIDE

Each tablet contains
Methylothiazide 5 mg. with
Deserpidine 0.25 mg. or 0.5 mg

Indications: Edema and mild to moderate hypertension (Enduron), and mild to moderately severe hypertension (Enduronyl). More potent agents, if added, can be given at reduced dosage.

Contraindications: Sensitivity to thiazides; severe renal disease (except nephrosis) or shutdown; severe hepatic disease or impending hepatic coma (hepatic coma due to hypokalemia has been reported in patients on thiazides). Do not use Enduronyl in severe mental depression, suicidal tendencies, active peptic ulcer, or ulcerative colitis.

Warnings: Consider possible sensitivity where there is history of allergy or asthma. If added potassium is indicated, dietary supplementation is recommended. Reserve enteric-coated potassium tablets for cautious use only when necessary, as they may induce serious or fatal small bowel lesions (stenosis with or without ulceration), cause obstruction, hemorrhage, and perforation often requiring surgery; discontinue them immediately if abdominal pain, distention, nausea, vomiting, or g.i. bleeding occurs. Neither Enduron nor Enduronyl contains added potassium.

Precautions: Use thiazides cautiously in severe renal dysfunction, impaired hepatic function or progressive liver disease; also in pregnancy (bone marrow depression, thrombocytopenia, and altered carbohydrate metabolism have been reported in certain newborn). In surgery, thiazides may reduce response to vasopressors, and increase response to tubocurarine. Antihypertensive response may be enhanced following sympathectomy. Watch for electrolyte imbalance (e.g., hyponatremia) in all patients. In hypokalemia (especially in digitalized patients) give supplemental potassium. In hypochloremic alkalosis, give supplemental chloride.

Use rauwolfias with caution in patients with history of peptic ulcer. Rauwolfias with anesthetics may produce hypotension and bradycardia. Discontinue Enduronyl two weeks before elective surgery. Consider vagal blocking agents during emergency surgery. In epilepsy, adjust anticonvulsant dosage. In electroshock, shorten stimulus strength and duration. In occasional patients with depressive tendencies, rauwolfias may precipitate severe mental depression that usually disappears when drug is stopped.

Adverse Reactions: Thiazide reaction include blood dyscrasias (thrombocytopenia with purpura, agranulocytosis, aplastic anemia); elevation of BUN, serum uric acid or blood sugar; anorexia, nausea, vomiting, diarrhea, headache, dizziness, paresthesia, weakness, skin rash, photosensitivity, jaundice, symtomatic gout, and pancreatitis. Cutaneous vasculitis in the elderly has been reported with other thiazides. Adverse effects with deserpidine are qualitatively similar to those with reserpine, but their incidence is lower. These include nasal stuffiness, abdominal cramps or diarrhea, nausea, headache, weight gain, reduced libido and potency, peptic ulcer aggravation, epistaxis, skin eruption, asthma in susceptible patients, electrolyte imbalance, excessive salivation, and a reversible Parkinson's syndrome. Excessive drowsiness, fatigue, weakness, and nightmares may signal mental depression. Thrombocytopenia, purpura, and a symptom manifested by dull sensorium, deafness, uveitis, glaucoma, and optic atrophy are rare allergic reactions to other rauwolfias. Hypotension from antihypertensive agents may precipitate angina attacks in susceptible individuals. Usually adverse reactions disappear when drug is withdrawn.

EUTRON[™]

Each tablet contains
Pargyline Hydrochloride 25 mg.
with Methylothiazide 5 mg.

Indications: For treatment of patients with moderate to severe hypertension, especially those with severe diastolic hypertension. Not recommended for patients with mild or labile hypertension amenable to therapy with sedatives and/or thiazide diuretics alone. It is desirable to establish the dosage of Eutron by administering component drugs separately.

Contraindications: Pheochromocytoma, advanced renal disease, increasing renal dysfunction, paranoid schizophrenia and hyperthyroidism. Hepatic coma has been reported as consequence of hypokalemia with thiazide therapy. Until further experience is gained not recommended for patients with malignant hypertension, children under 12, or pregnant patients.

Concomitant use of the following is contraindicated: other monoamine oxidase inhibitors; parenteral forms of reserpine or guanethidine; sympathomimetic drugs; foods high in tyramine such as cheese; imipramine and amitriptyline, or similar antidepressants; methyldopa. 2 week interval should separate therapy and use of these agents.

Methylothiazide is contraindicated in patients with known sensitivity to thiazides.

Warnings: Pargyline hydrochloride is a monoamine oxidase inhibitor. Warn patients against eating cheese, and using alcohol, proprietary drugs or other medication without the knowledge of the physician. When indicated, alcohol, narcotics (meperidine should be avoided), anti-histamines, barbiturates, chloral hydrate, and other hypnotics, sedatives, tranquilizers, or caffeine, may be used cautiously in reduced dosage. In emergency surgery $\frac{1}{4}$ to $\frac{1}{2}$ the usual dose of narcotics, analgesics, and other premedications should be used avoiding parenteral administration where possible. Carefully adjust dose of anesthetics to response of patient. Withdraw pargyline two weeks before elective surgery.

Warn patients about the possibility of postural hypotension. Those with angina or coronary artery disease should not increase physical activity with an improvement in well being. Pargyline may lower blood sugar.

Avoid use of enteric-coated potassium tablets, as these may induce serious or fatal small-bowel lesions consisting of stenosis with or without ulceration. These small-bowel lesions have caused obstruction, hemorrhage and perforation frequently requiring surgery. Medication should be discontinued immediately if abdominal pain, distention, nausea, vomiting or GI bleeding occurs. These products contain no added potassium salts and if added potassium intake is desired, dietary supplementation is recommended. Coated potassium tablets should be reserved for cautious use when adequate dietary supplementation is impractical. In patients with a history of allergy or asthma the possibility of sensitivity reactions should be considered.

Precautions: Measure blood pressure while patient is standing to determine antihypertensive effect. Use with caution in hyperactive or hyperexcitable persons. Such persons may show increased restlessness and agitation. Withdraw drug during acute febrile illness. Watch patients with impaired renal function for increasing drug effects or elevation of BUN and other evidence of progressive renal failure; withdraw drug if such alterations persist and progress. Use with caution in patients with liver disease. As with all new drugs, complete blood counts, urinalyses, and liver function tests should be performed periodically. With prolonged therapy, examine patients for change in color perception, visual fields and fundi. Also reported have been: blood dyscrasias including thrombocytopenia with purpura, agranulocytosis and aplastic anemia; elevations of BUN, serum uric acid, or blood sugar. Symptomatic gout may be induced. In surgical patients thiazides may reduce response to vasopressors and increase response to tubocurarine.

Adverse Reactions: Pargyline may be associated with orthostatic hypotension. Mild constipation, slight edema, dry mouth, sweating, increased appetite, arthralgia, nausea and vomiting, headache, insomnia, difficulty in micturition, nightmares, impotence, delayed ejaculation, rash, and purpura have been encountered with pargyline. Hyperexcitability, increased neuromuscular activity (muscle twitching) and other extrapyramidal symptoms have been reported in a few patients with reduced cardiac reserve.

During intensive or prolonged therapy, guard against hypochloremic alkalosis and hypokalemia (especially the latter if patient is on digitalis). Observe all patients for signs of hyponatremia ("low salt" syndrome).

Reported thiazide reactions also include anorexia, nausea, vomiting, diarrhea, headache, dizziness, paresthesia, weakness, skin rash, photosensitivity, jaundice, and pancreatitis. Nocturia has been observed with the combination.

801438





Tandearil®, oxyphenbutazone, 100 mg. tablets

Indications: Osteoarthritis, rheumatoid arthritis, rheumatoid spondylitis, psoriatic arthritis, gout, painful shoulder (peritendinitis, capsulitis, bursitis and acute arthritis of that joint), acute superficial thrombophlebitis, severe forms of a variety of local inflammatory conditions. (In inflammatory conditions not involving prolonged or fatal disease, use only when severity of condition balances potential toxicity.) The drug has no significant uricosuric action but is of value only in the treatment of acute gouty arthritis.

Contraindications: Edema; danger of cardiac decompensation; history or symptoms of peptic ulcer; renal, hepatic or cardiac damage; history of drug allergy; history of blood dys-

crasia. The drug should not be given when the patient is senile or when other potent drugs are given concurrently.

Warning: Tandearil is an analog of phenylbutazone; sensitive patients may be cross-reactive. If coumarin-type anticoagulants are given simultaneously, watch for excessive increase in prothrombin time. Instances of severe bleeding have occurred. Pyrazole compounds may potentiate the pharmacologic action of sulfonyleurea, sulfonamide-type agents and insulin. Carefully observe patients receiving such therapy. Use with great caution in the first trimester of pregnancy.

Precautions: Before prescribing, carefully select patients, avoiding those responsive to routine measures as well as contraindicated patients. Obtain a detailed history and a com-

plete physical and laboratory examination, including a blood count. The patient should not exceed recommended dosage, should be closely supervised and should be warned to discontinue the drug and report immediately fever, sore throat, or mouth lesions (symptoms of blood dyscrasia); sudden weight gain (water retention); skin reactions; black or tarry stools or other evidence of intestinal hemorrhage occur. Make regular blood counts. Discontinue the drug immediately and institute countermeasures if the white count changes significantly, granulocytes decrease, or immature forms appear. Use greater care in the elderly and in hypertensives.

Adverse Reactions: The most common are nausea, edema and drug rash. Swelling of the ankles or face may be minimized by with-

"Pain Break" for an osteoarthritic. Tandearil can ease it.

At 46, her knees still look good on the outside. But inside, there may be the familiar picture of osteoarthritis.



If aspirin doesn't help, Tandearil often will. Pain and stiffness begin to ease up in 3 or 4 days. You can often maintain response with a daily dose of only 1 or 2 tablets.

Of course, Tandearil is not for every osteoarthritic. Select your patients carefully and follow them in line with the Contraindications, Precautions, Warning, and Adverse Reactions listed below.

But for many aspirin-stubborn osteoarthritics, let Tandearil ease the unwelcome pain breaks of osteoarthritis.

Tandearil[®] oxyphenbutazone

holding dietary salt, reduction in dosage or use of diuretics. In elderly patients and in those with hypertension the drug should be discontinued with the appearance of edema. The drug has been associated with peptic ulcer and may reactivate a latent peptic ulcer. The patient should be instructed to take doses immediately after meals or with milk to minimize gastric upset. Mild drug rashes frequently subside with reduction of dosage. However, rash accompanied by fever or other systemic reactions usually requires withholding medication. Purpuric rash has also been reported. Agranulocytosis or a generalized allergic reaction similar to a serum sickness syndrome may occur and require permanent withdrawal of medication. Stomatitis, salivary gland enlargement, vomiting, vertigo and languor may

occur. Leukemia and leukemoid reactions have been reported. While not definitely attributable to the drug, a causal relationship cannot be excluded. Thrombocytopenic purpura and aplastic anemia may occur. Confusional states, agitation, headache, blurred vision, optic neuritis and transient hearing loss have been reported, as have hyperglycemia, hepatitis, jaundice, and several cases of anuria and hematuria. With long-term use, reversible thyroid hyperplasia may occur infrequently. Moderate lowering of the red cell count due to hemodilution may occur.

Dosage in Osteoarthritis: Initial: 3 to 6 tablets daily in divided doses. It is usually unnecessary to exceed 4 tablets daily. A trial period of 1 week is adequate to determine response; in the absence of a favorable response, discontinue. Maintenance: An effective level is often achieved with 1 or 2 tablets daily, do not exceed 4 daily.

6562-VI(B)R2

For complete details, please see full prescribing information.



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Ardsley, New York

TA-6806





Tissue's healing nicely. Yet anxiety slows his steps toward recovery.

By helping overcome anxiety and tension which can thwart the convalescent's progress, Equanil® often may play an important role in medical and surgical aftercare.

Indications: For use in management of anxiety and tension occurring alone or as accompanying symptom complex to medical and surgical disorders and procedures. Though not a hypnotic, fosters normal sleep through anxiolysis and related muscle-relaxant properties.

Contraindications: History of sensitivity to meprobamate.

Important Precautions: Carefully supervise dose and amounts prescribed, especially for patients prone to overdose themselves. Excessive prolonged use has been reported to result in dependence or habituation in susceptible persons, as alcoholics, ex-addicts, and other severe psychoneurotics. After prolonged excessive dosage, reduce dosage gradually to avoid possibly severe withdrawal reactions. Abrupt discontinuance of excessive doses has sometimes resulted in epileptiform seizures.

Warn patients of possible reduced alcohol tolerance, with resultant slowing of reaction time and impairment of judgment and coordination.

Reduce dose if drowsiness, ataxia or visual disturbance occurs; if persistent, patients should not operate vehicles or dangerous machinery.

Side Effects include drowsiness, usually transient; if persistent and associated with ataxia, usually responds to dose reduction; occasionally concomitant CNS stimulants (amphetamine, mephentermine sulfate) are desirable. Allergic or idiosyncratic reactions are rare, but such reactions, sometimes severe, can develop in patients receiving only 1 to 4 doses who have had no previous contact with meprobamate. Previous history of allergy may or may not be related to incidence of reactions. Mild reactions are characterized by itchy urticarial or erythematous maculopapular rash, generalized or confined to groin. Acute nonthrombocytopenic purpura with cutaneous petechiae, ecchymoses, peripheral edema and fever have been reported.

One fatal case of bullous dermatitis following intermittent use of meprobamate with prednisolone has been reported. If allergic reaction occurs, meprobamate should be stopped and not reinstituted. Severe reactions, observed very rarely, include angioneurotic edema, bronchial spasms, fever, fainting spells, hypotensive crises (1 fatal case), anaphylaxis, stomatitis and proctitis (1 case) and hyperthermia. Treat symptomatically as with epinephrine, antihistamine and possibly hydrocortisone. Aplastic anemia (1 fatal case), thrombocytopenic purpura, agranulocytosis and hemolytic anemia have occurred rarely, almost always in presence of known toxic agents. A few cases of leukopenia, usually transient, have been reported on continuous administration.

Meprobamate may sometimes precipitate grand mal attacks in patients susceptible to both grand and petit mal. Extremely large doses can produce rhythmic fast activity in the cortical pattern. Impairment of accommodation and visual acuity has been reported rarely. After excessive dosage for weeks or months, withdraw gradually (1 or 2 weeks) to avoid recurrence of pretreatment symptoms (insomnia, severe anxiety, anorexia). Abrupt discontinuance of excessive doses has sometimes resulted in vomiting, ataxia, tremors, muscle twitching and epileptiform seizures. Prescribe very cautiously and in small amounts for patients with suicidal tendencies. Suicidal attempts have resulted in coma, shock, vasomotor and respiratory collapse and anuria. Excessive doses have resulted in prompt sleep; reduction of blood pressure, pulse and respiratory rates to basal levels; and occasionally hyperventilation. Treat with immediate gastric lavage and appropriate symptomatic therapy. (CNS stimulants and pressor amines as indicated.) Doses above 2400 mg./day are not recommended.

Composition: Tablets, 200 mg. and 400 mg. meprobamate. Coated Tablets, WYSEALS® EQUANIL (meprobamate) 400 mg. (All tablets also available in REDIPAK® [strip pack], Wyeth.) Continuous-Release Capsules, EQUANIL L-A (meprobamate) 400 mg.

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Novahistine LP tablets are most useful for relief of nasal congestion in patients without pain or fever.

Novahistine Singlet tablets, which provide analgesic-antipyretic effect, as well as decongestant action, are indicated for upper respiratory infections accompanied by pain, aches and fever.

Whether you prescribe Novahistine LP or Novahistine Singlet, a total daily dose of 3 or 4 tablets will usually provide effective, continuous relief.

Use cautiously in patients with severe hypertension, diabetes mellitus, hyperthyroidism or urinary retention.

Caution ambulatory patients that drowsiness may result.

Each Novahistine LP tablet contains phenylephrine hydrochloride, 25 mg.; and chlorpheniramine maleate, 4 mg.

Each Novahistine Singlet tablet contains phenylephrine hydrochloride, 40 mg.; chlorpheniramine maleate, 8 mg.; and acetaminophen, 500 mg.



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Indications: Hypothyroid conditions. **Contraindications:** Thyrotoxicosis, acute myocardial infarctions unless associated with hypothyroidism. In hypothyroidism with hypoadrenalism coadministration of corticoids with LETTER[®] is recommended. **Precautions and Side Effects:** Excessive dosage may result in diarrhea, cramps, palpitation, nervousness, rapid pulse, sweating. If symptoms appear, discontinue medication for several days, then reinstitute at a lower level. Since myxedema patients with heart disease may suffer seriously from abrupt increases in dosage, caution should be exercised in adjusting dosage. **Dosage:** Generally, the initial adult dosage is 0.1 mg. daily. This may be increased in small increments every one to three weeks until proper metabolic balance is achieved. **Available:** Bottles of 100 tablets, in six potencies: 0.025 mg. (violet), 0.05 mg. (peach), 0.1 mg. (pink), 0.2 mg. (green), 0.3 mg. (yellow), and 0.5 mg. (white).



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(Warning: may be habit forming)
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Phenacetin (3 gr.) 194.0 mg.
Hyoscyamine sulfate 0.031 mg.
Codeine phosphate 1/4 gr. (No. 2),
1/2 gr. (No. 3), 1 gr. (No. 4)
(Warning: may be habit forming)

Contraindications: Hypersensitivity to any ingredient.

Precautions: As with all phenacetin-containing products, avoid excessive or prolonged use.

Side Effects: Side effects are uncommon—nausea, constipation, and drowsiness have been reported.

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Zephiran® (brand of benzalkonium, as chloride, refined) 1:5000, antiseptic preservative and wetting agent to promote penetration and spread of the formula.

NTZ is well tolerated. Used in a cold it may help prevent sinusitis by opening sinus ostia and permitting drainage. It may also be used in sinusitis to help establish drainage.

The spray is best used twice, the second a few minutes after the first, repeated every three or four hours as needed. NTZ is for temporary relief of nasal symptoms, and overdosage should be avoided.

Supplied: NTZ Nasal Spray, plastic squeeze bottles of 20 ml.; NTZ Nasal Solution, bottles of 30 ml. (1 fl. oz.) with dropper.

Winthrop

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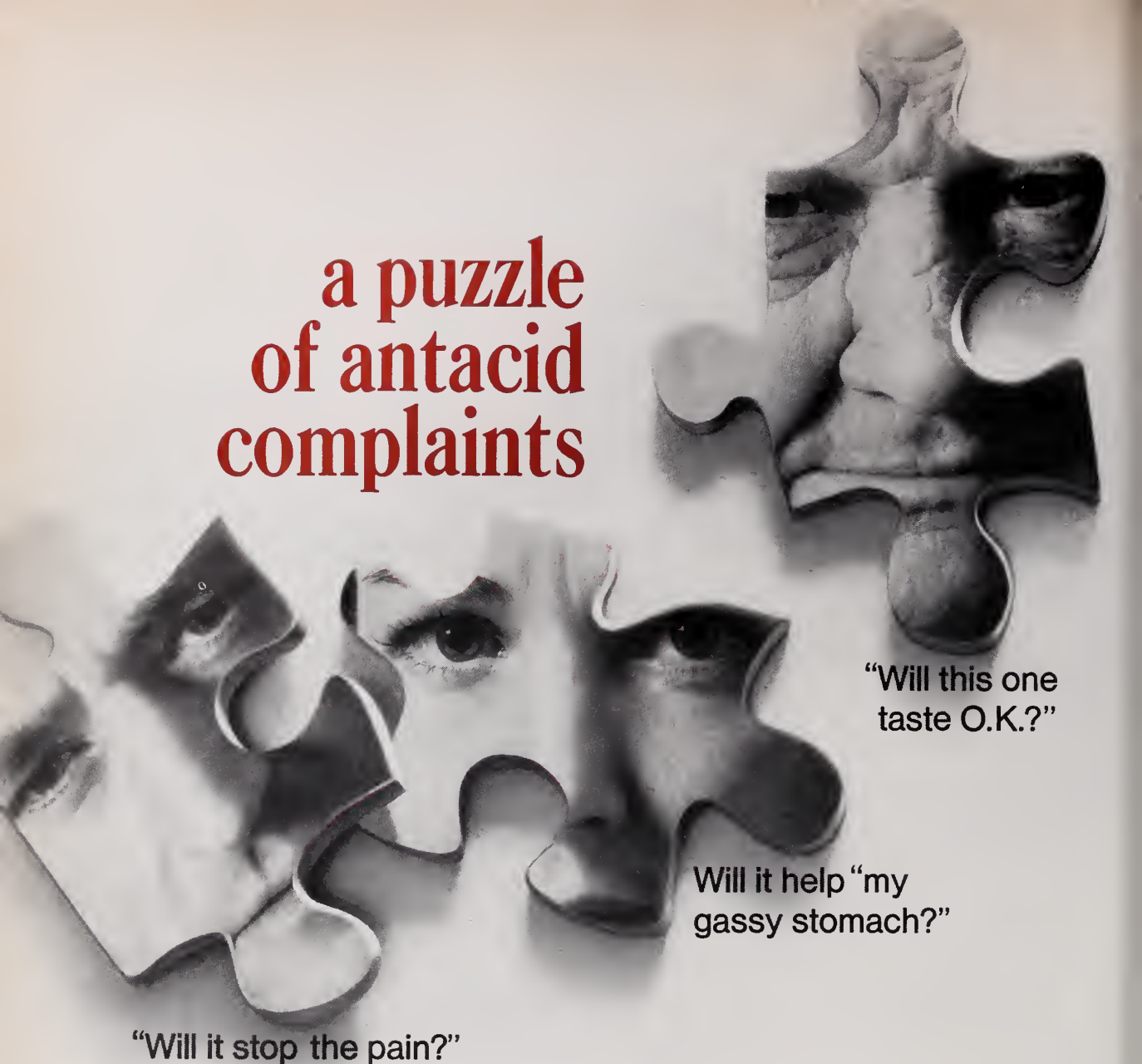


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nasal symptoms
on contact**

a puzzle of antacid complaints



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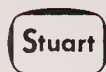
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in 87.5% of 104 patients after a total of 20,459
documented days of therapy.²

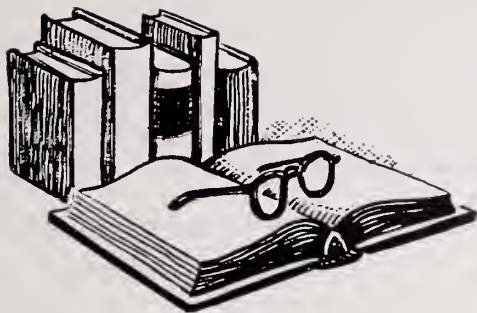
Composition: Each Mylanta chewable tablet or teaspoonful
(5 ml.) contains: magnesium hydroxide, 200 mg.;
aluminum hydroxide, dried gel, 200 mg.; simethicone, 20 mg.

Dosage: One or two tablets (well chewed or allowed
to dissolve in the mouth) or one or two teaspoonfuls to be
taken between meals and at bedtime.

References: 1. Hoon, J. R.: Arch. Surg. 93:467 (Sept.) 1966.
2. Danhof, I. E., Personal communication.



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Book Reviews

Diagnostic Procedures in Gastroenterology. With Nurse's Notes and Supplements on Instructions to Patients and Dietary Treatment. Edited by CHARLES H. BROWN, M.D., with 21 contributors. Price, \$19.75. Pp. 438, with 105 figures and 4 color plates. St. Louis: Mosby, 1967.

The almost quarter century from 1943 to 1967 has shown tremendous advances in all branches of medicine and none greater than in gastroenterology.

The need for a book to evaluate the major role of specific diagnostic procedures in gastroenterology is long overdue.

To fill this void in our knowledge of the major facets in this field, the Editor, Dr. Charles H. Brown, a recognized authority and lecturer in clinical gastroenterology, has undertaken this task. To emphasize the importance of this subject Dr. Brown has called upon experienced contributors for some of the material dealing with selected subjects such as "routine" laboratory studies, roentgenographic studies, esophagoscopy, Bernstein test for esophagitis and gastroscopy, etc. Other chapters deal in depth on diagnostic studies and procedures related to the pancreas, intestinal absorption, the liver, and the rectum and colon, as well as miscellaneous procedures and specialized treatment.

In addition the book contains supplements of "special instructions to patients" and "diets," which are of great importance and timesaving in the management of gastrointestinal problems. These supplements together with the main chapters are unique, practical, and well documented. The entire text, accurately indexed, has ready references at the end of each chapter.

Without reservation this reviewer can recommend this splendid publication to internists with a particular interest in gastroenterology, to gastroenterologists, and to present and future fellows in gastroenterology.

FRED A. J. GEIER, M.D.

Ciba Foundation Study Group No. 29. Antilymphocytic Serum. Edited by G. E. W. WOLSTENHOLME, O.B.E., M.A., F.R.C.P., F.I.Biol., and MAEVE O'CONNOR, B.A. Price, \$4.25. Pp. 165, with 37 illustrations. Boston: Little, Brown, 1967.

Early success in reducing rejection of kidney transplants in man by the administration of antilymphocytic serum (ALS) has stirred up a great deal of interest in

this powerful immunosuppressant. The purpose of the conference reported in this volume was to share the basic knowledge needed to better understand what is going on, and how to measure and improve this very important effect. The conference was both a timely and a highly informative one and undoubtedly will be of significant value to workers in the field of immunology of transplantation at this time.

The volume presents pertinent reports of the current state of the art by leading authorities in the field, followed by summaries of discussions of the reports. There is a terminal general discussion by topics of concern and a useful index.

The lead article by Starzl and co-workers reports on recent experience in the use of heterologous antilymphocyte globulin (ALG) in human renal homotransplantation. This key paper, pointing to the improved early course observed in a series of patients who received ALG as adjuvant therapy, set the stage for a stimulating conference which fulfilled its objectives. Impressive reports presented by authorities concerned the properties of antilymphocytic serum, its mode of action, its effects on primates, suppression of secondary disease following bone marrow grafting with antilymphocytic serum, and the effects of antilymphocytic serum in mice, dogs and man.

This cogent, pocket-sized treatise packs a persuasive message in succinct and highly readable form.

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Contraindications: Edema; danger of cardiac compensation; history or symptoms of peptic ulcer; renal, hepatic or cardiac damage; history of drug allergy; history of blood dyscrasia. The drug should not be given when the patient is senile or when other potent drugs are given concurrently. Large doses of Butazolidin are contraindicated in glaucoma.

Warnings: If coumarin-type anticoagulants are given simultaneously, watch for excessive increase in prothrombin time. Instances of severe bleeding have occurred. Pyrazole compounds may potentiate the pharmacologic action of sulfonamide-type drugs, sulfonylurea, sulfonamide-type drugs and insulin. Carefully observe patients receiving such therapy. Use with great caution in the first trimester of pregnancy.

Precautions: Before prescribing, carefully select patients, avoiding those responsive to salicylates as well as contraindicated patients. Obtain a detailed history and a complete physical and laboratory examination, including a blood count. The patient should not exceed recommended dosage, should be closely supervised and should be warned to discontinue the drug and report immediately if fever, sore throat, or mouth lesions (symptoms of blood dyscrasia); sudden weight gain (water retention); skin reactions; black or tarry stools or other evidence of intestinal hemorrhage occur. Make regular blood counts. Discontinue the drug immediately and institute countermeasures if the white count changes significantly, granulocytes decrease, or immature cells appear. Use greater care in the elderly and in hypertensives.

Adverse Reactions: The most common are edema, edema and drug rash. Swelling of the hands or face may be minimized by withholding dietary salt, reduction in dosage or use of diuretics. In elderly patients and in those with hypertension the drug should be discontinued at the appearance of edema. The drug has been associated with peptic ulcer and may reactivate a latent peptic ulcer. The patient

should be instructed to take doses immediately before or after meals or with milk to minimize gastric upset. Mild drug rashes frequently subside with reduction of dosage. However, rash accompanied by fever or other systemic reactions usually requires withholding medication. Purpuric rash has also been reported. Agranulocytosis, exfoliative dermatitis, Stevens-Johnson syndrome, or a generalized allergic reaction similar to serum sickness may occur and require permanent withdrawal of medication. Stomatitis, salivary gland enlargement, vomiting, vertigo and languor may occur. Leukemia and leukemoid reactions have been reported. While not definitely attributable to the drug, a causal relationship cannot be excluded. Thrombocytopenic purpura and aplastic anemia may occur. Confusional states, agitation, headache, blurred vision, optic neuritis and transient hearing loss have been reported, as have hyperglycemia, hepatitis, jaundice, and several cases of anuria and hematuria. With long-term use, reversible thyroid hyperplasia may occur infrequently. Moderate lowering of the red cell count due to hemodilution may occur.



Dosage in Painful Shoulder: Initial: 3 to 6 capsules daily in 3 or 4 equal doses. Trial period: one week. Maintenance dosage should not exceed 4 capsules daily; response is often achieved with 1 or 2 capsules daily.

6509-V(B)82

Butazolidin® alka Geigy

Capsules

phenylbutazone, 100 mg.; dried aluminum hydroxide gel, 100 mg.; magnesium trisilicate, 150 mg.; homatropine methylbromide, 1.25 mg.

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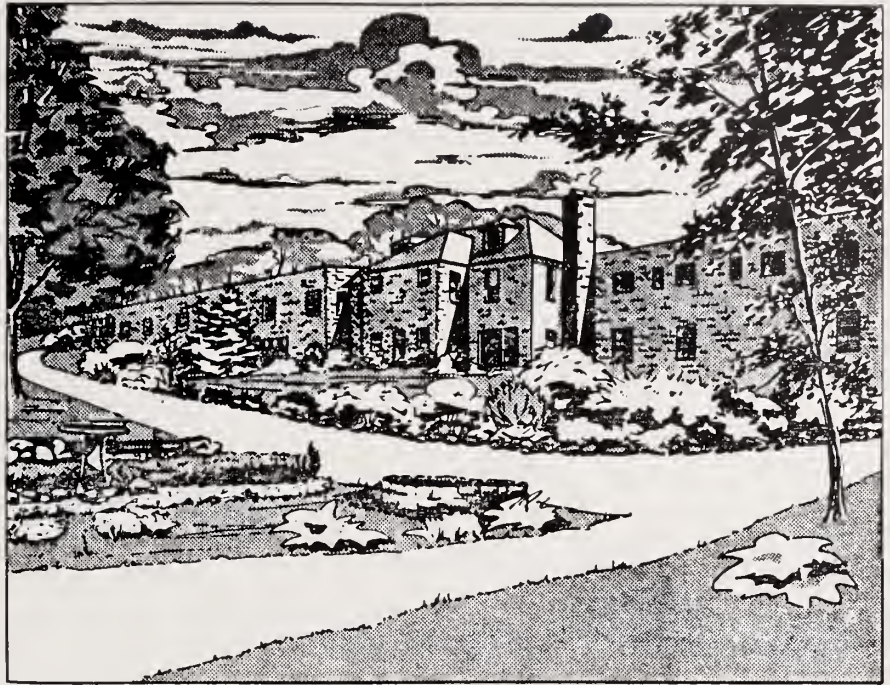
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[031767]

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Contraindications: Infants, patients with history of convulsive disorders, glaucoma or known hypersensitivity to drug.

Warning: Not of value in the treatment of psychotic patients, and should not be employed in lieu of appropriate treatment.

Precautions: Limit dosage to smallest effective amount in elderly or debilitated patients (not more than 1 mg, one or two times daily initially) to preclude ataxia or oversedation, increasing gradually as

needed or tolerated. As is true of all CNS-acting drugs, until correct maintenance dosage is established, advise patients against possibly hazardous procedures requiring complete mental alertness or physical coordination. Driving during therapy not recommended. In general, concurrent use with other psychotropic agents is not recommended. If such combination therapy is used, carefully consider individual pharmacologic effects—particularly with known compounds which may potentiate action of Valium (diazepam), such as phenothiazines, barbiturates, MAO inhibitors and other antidepressants. Advise patients against simultaneous ingestion of alcohol or other CNS depressants. Safe use in pregnancy not established. Employ usual precautions in treatment of anxiety states with evidence of impending depression; suicidal tendencies may be present and protective measures necessary. Observe usual precautions in impaired renal or hepatic function. Periodic blood counts and liver function tests advisable in long-term use. Cease therapy gradually.

Side Effects: Side effects (usually dose-related) are fatigue, drowsiness and ataxia. Also reported: mild nausea, dizziness, blurred vision, diplopia, headache, incontinence, slurred speech, tremor and skin rash; paradoxical reactions (excitement, depression, stimulation, sleep disturbances, acute hyperexcited states, hallucinations); changes in EEG patterns during and after drug treatment. Abrupt cessation after prolonged overdosage may produce withdrawal symptoms (convulsions, tremor, abdominal and muscle cramps, vomiting, sweating) similar to those seen with barbiturates, meprobamate and chlordiazepoxide HCl.

Dosage: *Adults:* Mild to moderate psychoneurotic reactions, 2 to 5 mg b.i.d. or t.i.d.; severe psychoneurotic reactions, 5 to 10 mg t.i.d. or q.i.d.; alcoholism, 10 mg t.i.d. or q.i.d. in first 24 hours, then 5 mg t.i.d. or q.i.d. as needed; muscle spasm with cerebral palsy or athetosis, 2 to 10 mg t.i.d. or q.i.d. *Geriatric patients:* 1 or 2 mg/day initially, increase gradually as needed and tolerated. (See Precautions.)

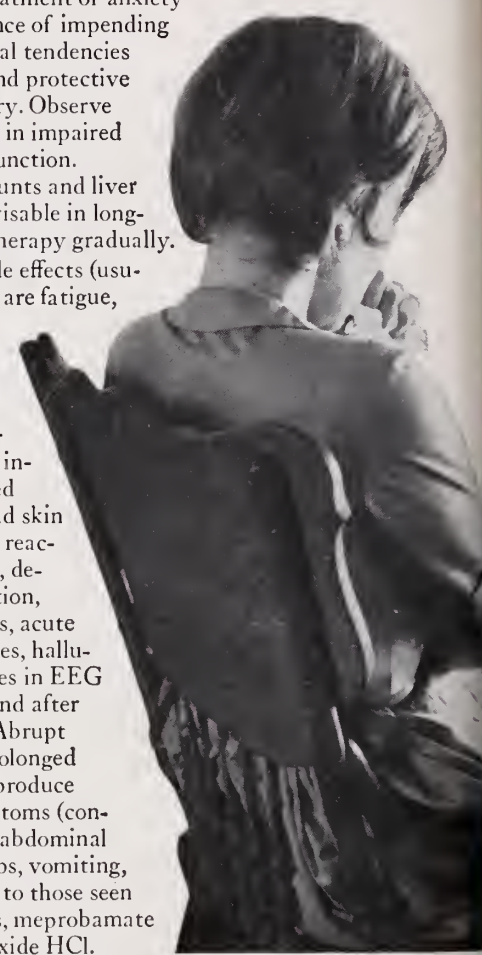
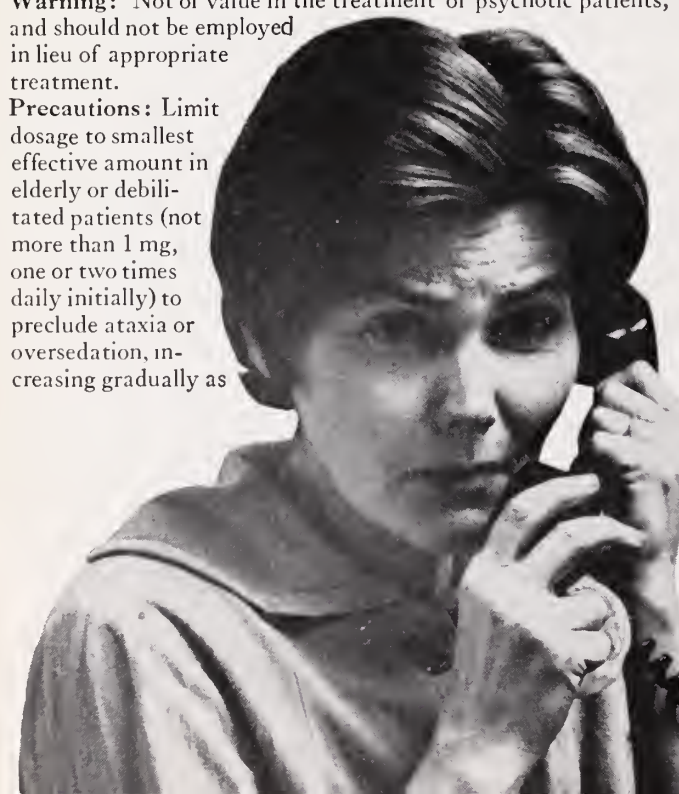
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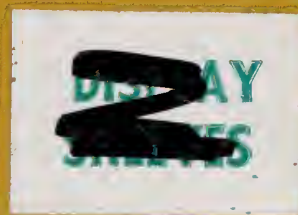
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SHARAD Y. DESHPANDE, M.D.

Fusion for Cervical Spondylosis
JOHN L. FOX, M.D.

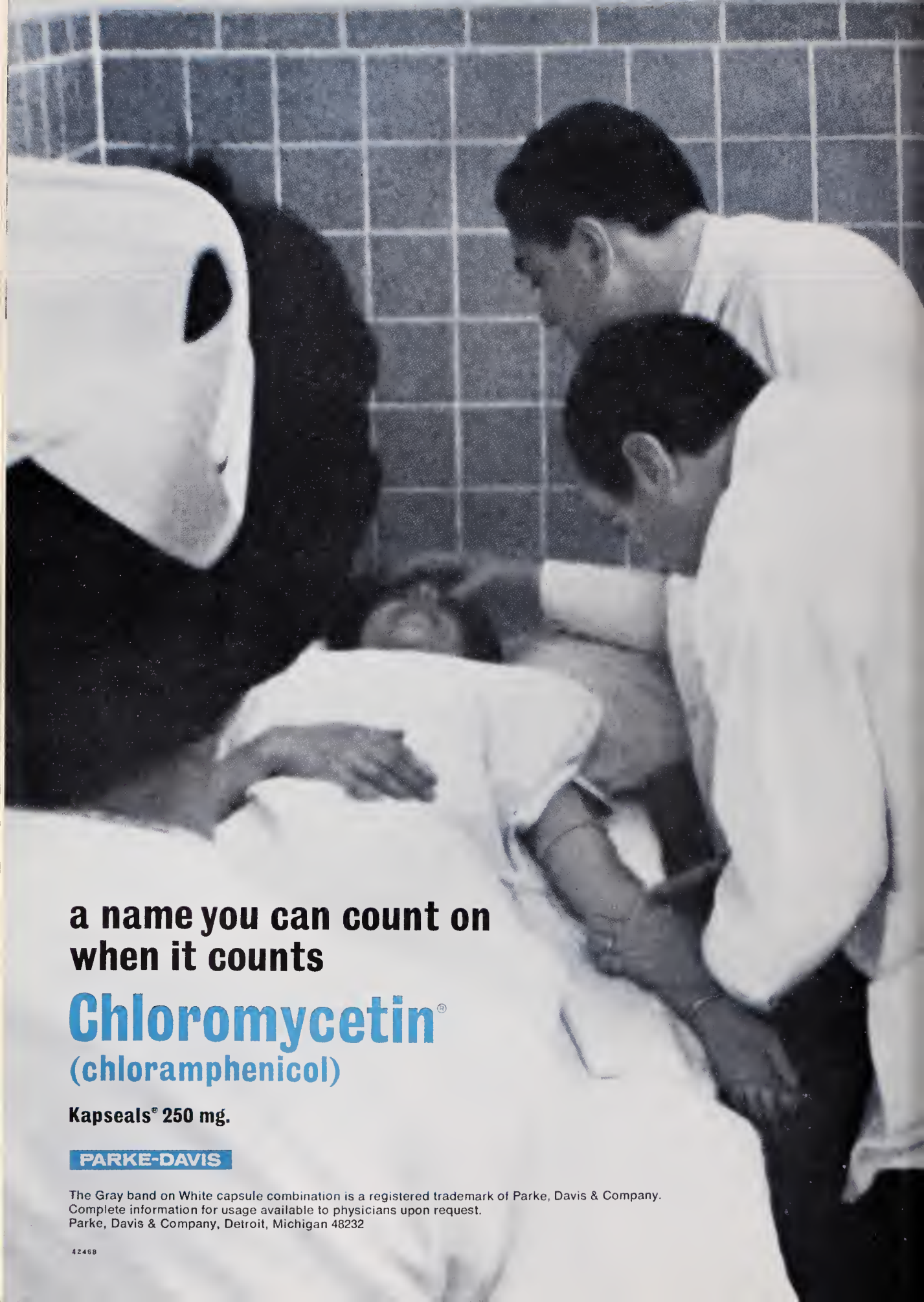
Hyperglycemia from Dilantin
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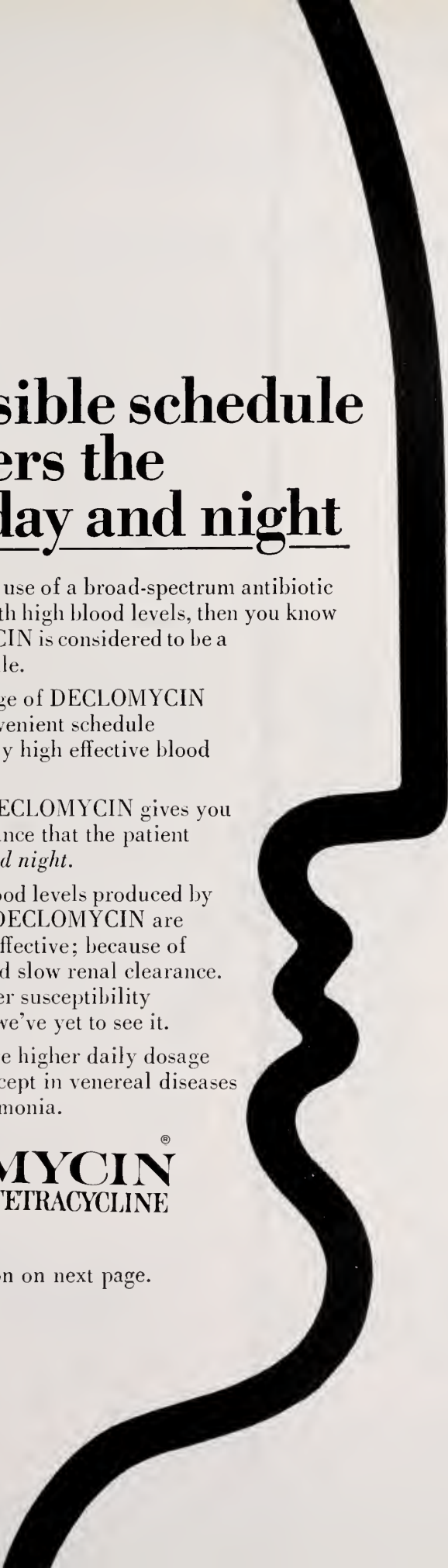
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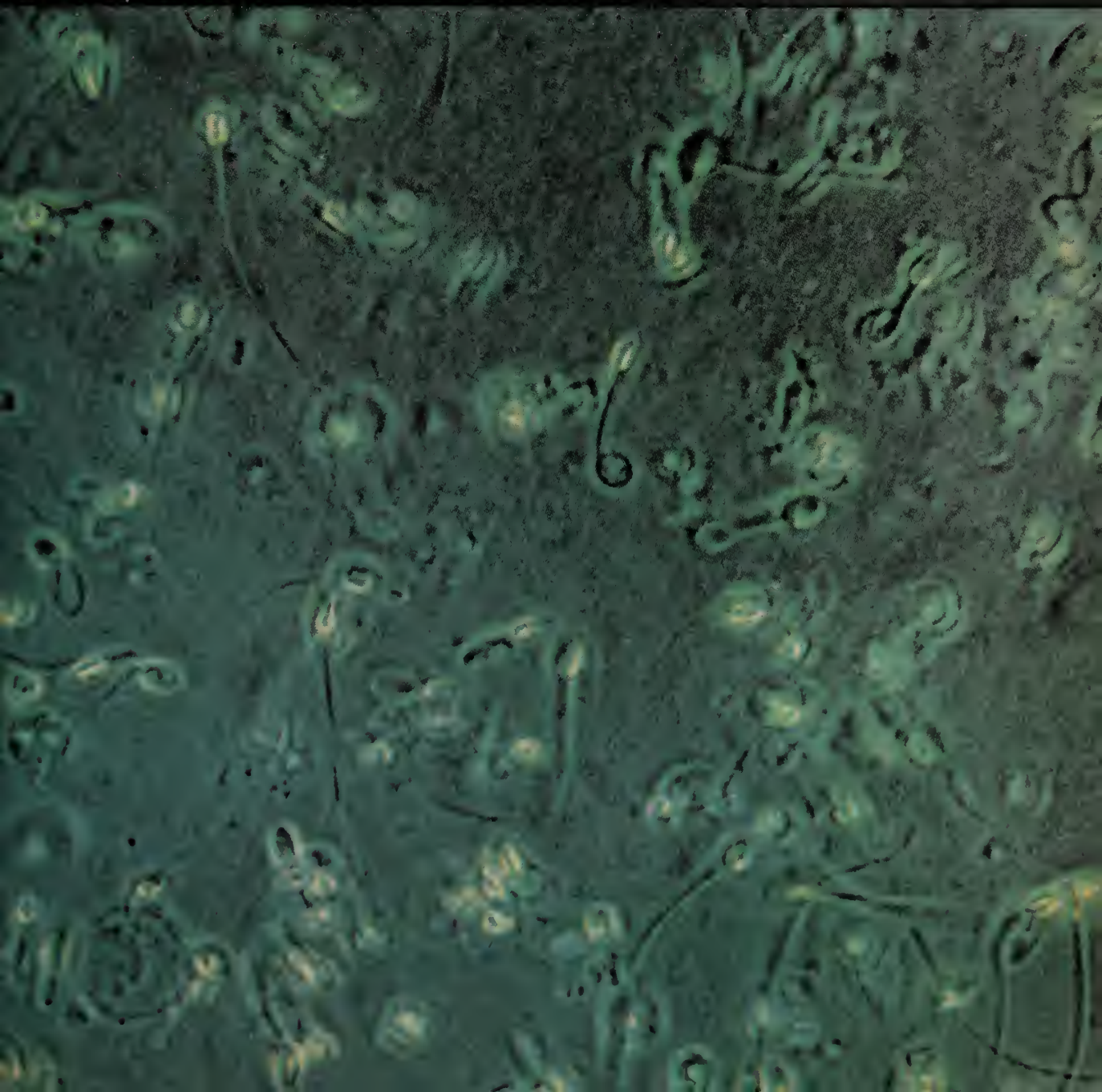
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Turn page for contraindications, precautions and side effects.



Reduction of oral contraceptive dosage to the lowest effective levels is a well-accepted principle of conservative medical practice. In keeping with this view, Norinyl is now also available as Norinyl-1, containing exactly one half the previous dosage of norethindrone and mestranol. Clinical experience has established that effective fertility control can be achieved with the same degree of reliability and safety with new Norinyl-1 when taken as directed.

What about switching patients from higher dosage forms?

In transferring patients to low-dose Norinyl-1 from higher-dosage oral contraceptives, some breakthrough bleeding may occur in the early cycles. In the majority of cases the bleeding episode is mild and self-limited. The long-term advantages of the lower dosage form should be weighed against the inconvenience of possible breakthrough bleeding in the individual patient.

Contraindications: 1. Patients with thrombophlebitis or with a history of thrombophlebitis or pulmonary embolism. 2. Liver dysfunction or disease. 3. Patients with known or suspected carcinoma of the breast or genital organs. 4. Undiagnosed vaginal bleeding.

Warnings: 1. Discontinue medication pending examination if there is sudden partial or complete loss of vision or if there is a sudden onset of proptosis, diplopia or migraine. If examination reveals papilledema or retinal vascular lesions, medication should be withdrawn. 2. Since the safety of NORINYL-1 (norethindrone 1 mg. with mestranol 0.05 mg.) in pregnancy has not been demonstrated, it is recommended that for any patient who has missed two consecutive periods, pregnancy should be ruled out before continuing the contraceptive regimen. If the patient has not adhered to the prescribed schedule, the possibility of pregnancy should be considered at the time of the first missed period. 3. Detectable amounts of the active ingredients in oral contraceptives have been identified in the milk of mothers receiving these drugs. The significance of this dose to the infant has not been determined.

Precautions: 1. The pretreatment physical examination should include special reference to breast and pelvic organs, as well as a Papanicolaou smear. 2. Endocrine and possibly liver function tests may be affected by treatment with NORINYL-1. Therefore, if such tests are abnormal in a patient taking NORINYL-1 it is recommended that they be repeated after the drug has been withdrawn for two months. 3. Under the influence of estrogen-progestogen preparations, preexisting uterine fibromyomata may increase in size. 4. Because these agents may cause some degree of fluid retention, conditions that may be influenced by this factor, such as epilepsy, migraine, asthma, cardiac or renal dysfunction, require careful observation. 5. NORINYL-1 should be used with caution in patients with a history of cerebrovascular accident. 6. In relation to breakthrough bleeding, and as in all cases of irregular bleeding *per vaginam*, nonfunctional causes should be borne in mind. In cases of undiagnosed vaginal bleeding, adequate diagnostic measures are indicated. 7. Patients with a history of psychic depression should be carefully observed and the drug discontinued if the depression recurs to a serious degree. 8. Any possible influence of prolonged NORINYL-1 therapy on pituitary, ovarian, adrenal, hepatic or uterine function awaits further study. 9. A decrease in glucose tolerance has been observed in a small percentage of patients on oral contraceptives. The mechanism of this decrease is obscure. For this reason, diabetic patients should be carefully observed while receiving NORINYL-1 therapy.

10. Because of the occasional occurrence of thrombophlebitis and pulmonary embolism in patients taking oral contraceptives, the physician should be alert to the earliest manifestations of the disease. 11. Because of the effects of estrogens on epiphyseal closure, NORINYL-1 should be used judiciously in young patients in whom bone growth is not complete. 12. The age of the patient constitutes no absolute limiting factor, although treatment with NORINYL-1 may mask the onset of the climacteric. 13. The pathologist should be advised of NORINYL-1 therapy when relevant specimens are submitted.

Side effects observed in patients receiving oral contraceptives: The following adverse reactions have been observed in patients receiving oral contraceptives: nausea, vomiting, gastrointestinal symptoms (such as abdominal cramps and bloating), breakthrough bleeding, spotting, change in menstrual flow, amenorrhea, edema, chloasma or melasma, breast changes (tenderness, enlargement and secretion), change in weight (increase or decrease), changes in cervical erosion and cervical secretion, suppression of lactation when given immediately postpartum, cholestatic jaundice, migraine, rash (allergic), rise in blood pressure in susceptible individuals, mental depression.

Although the following side effects have been reported in users of oral contraceptives, no cause and effect relationship has been established: anovulation post-treatment, premenstrual-like syndrome, change in libido, changes in appetite, cystitis-like syndrome, headache, nervousness, dizziness, fatigue, backache, hirsutism, loss of scalp hair, erythema multiforme, erythema nodosum, hemorrhagic eruption, itching.

The following occurrences have been observed in users of oral contraceptives (a cause and effect relationship has been neither established nor disproved): thrombophlebitis, pulmonary embolism, neuro-ocular lesions.

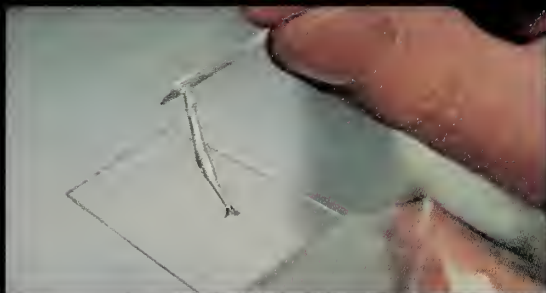
The following laboratory results may be altered by the use of oral contraceptives: increased sulfo-bromophthalein and other hepatic function tests, coagulation tests (increase in prothrombin, Factors VII, VIII, IX and X), thyroid function (increase in PBI and butanol extractable protein-bound iodine and decrease in T^3 values), metyrapone test, pregnanediol determination.

Here's why Norinyl-1 makes medical sense.

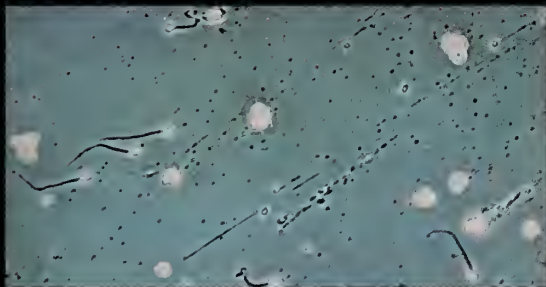
The effectiveness of Norinyl-1 as a low-dose oral contraceptive may be explained by its possible multiple action. In addition to its primary action of suppression of ovulation, Norinyl-1 may offer additional protective mechanisms... (1) creation of a cervical mucus that may be hostile to sperm penetration, and (2) development of an endometrium that may be out of phase with nidation.

These effects are illustrated below.

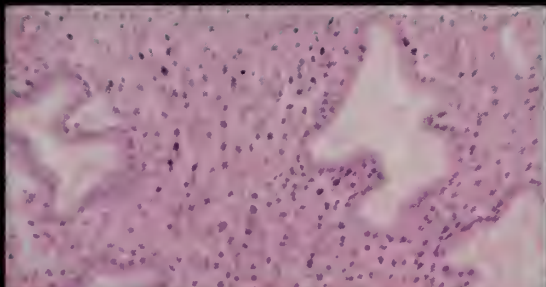
Untreated Patient



Cervical mucus at midcycle is usually thin and watery, with Spinnbarkeit (stretchability) of 15 to 20 cm.



Spermatozoa appear healthy, active, freemoving.

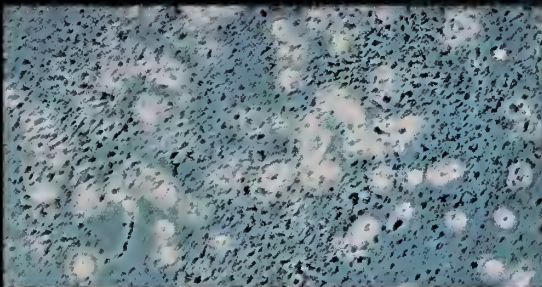


Endometrium of untreated patient is receptive to the fertilized ovum during secretory phase.

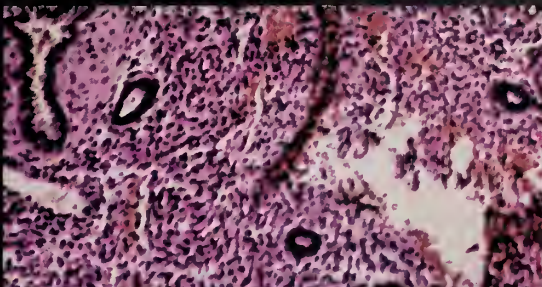
Norinyl-1 Patient



Cervical mucus at midcycle is scanty, viscous—with Spinnbarkeit of 1 cm. or less.



Immobile spermatozoa as they appear in cervical mucus taken from patient treated with Norinyl-1.



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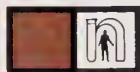


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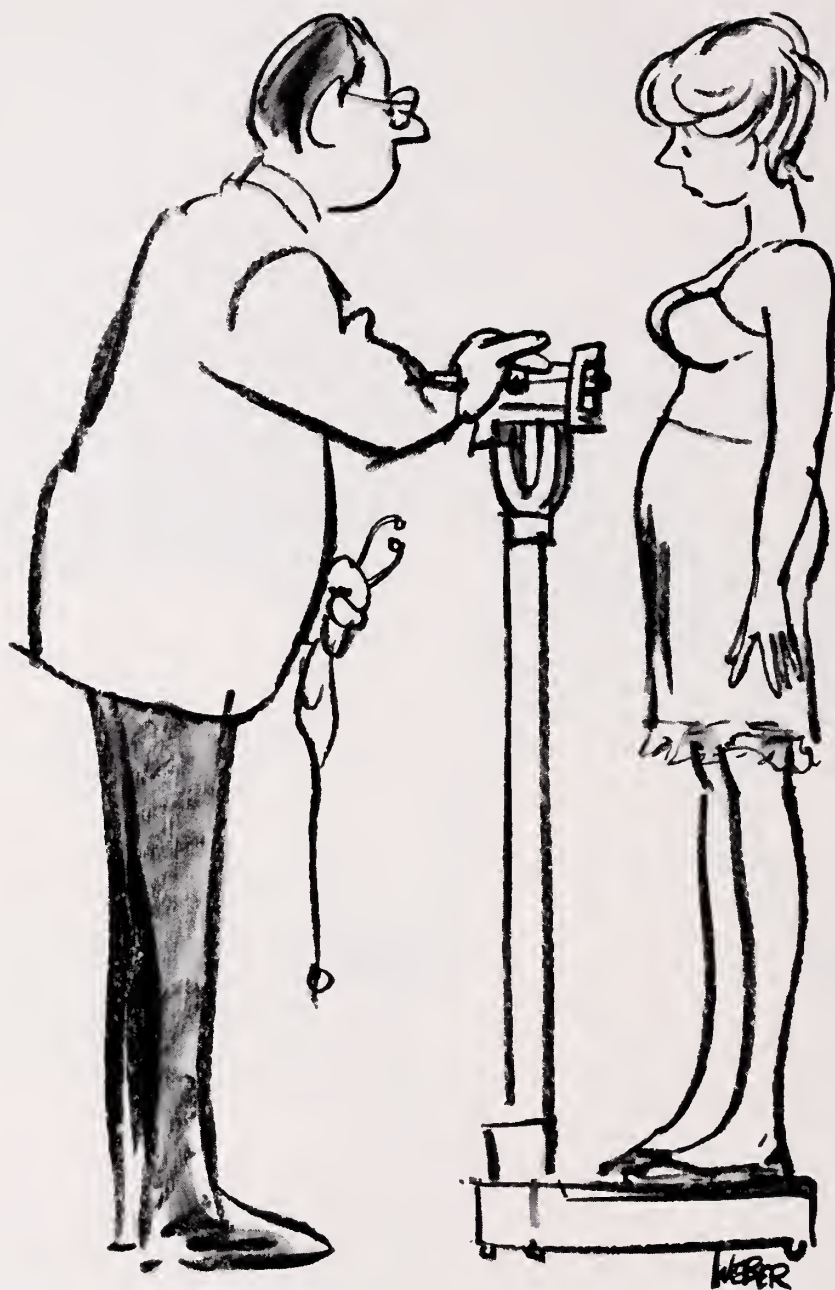
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Meprobamate: Careful supervision of dose and amounts prescribed is advised, especially for patients with known propensity for taking excessive quantities of drugs. Excessive and prolonged use in susceptible persons, e.g. alcoholics, former addicts, and other severe psychoneurotics, has been reported to result in dependence on the drug. Where excessive dosage has continued for weeks or months, reduce dosage gradually. Sudden withdrawal may precipitate recurrence of preexisting symptoms such as anxiety, anorexia, or insomnia; or withdrawal reactions such as vomiting, ataxia, tremors, muscle twitching and, rarely, epileptiform seizures. Should meprobamate cause drowsiness or visual disturbances, reduce dosage and avoid operation of motor vehicles, machinery or other activity requiring alertness. Effects of excessive alcohol consumption may be increased by meprobamate. Appropriate caution is recommended with patients prone to excessive drinking. In patients prone to both petit and grand mal epilepsy meprobamate may precipitate grand mal attacks. Prescribe cautiously and in small quantities to patients

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Side Effects: Overstimulation of the central nervous system, jitteriness and insomnia or drowsiness. Dextro-amphetamine sulfate: Insomnia, excitability, and increased motor activity are common and ordinarily mild side effects. Confusion, anxiety, aggressiveness, increased libido, and hallucinations have also been observed, especially in mentally ill patients. Rebound fatigue and depression may follow central stimulation. Other effects may include dry mouth, anorexia, nausea, vomiting, diarrhea, and increased cardiovascular reactivity.

Meprobamate: Drowsiness may occur and can be associated with ataxia; the symptom can usually be controlled by decreasing the dose, or by concomitant administration of central stimulants. Allergic or idiosyncratic reactions: maculopapular rash, acute nonthrombocytopenic purpura with petechiae, ecchymoses, peripheral edema and fever, transient leukopenia. A case of fatal bullous dermatitis, following administration of meprobamate and prednisolone, has been reported. Hypersensitivity has produced fever, fainting spells, angioneurotic edema, bronchial spasms, hypotensive crises (1 fatal case), anuria, stomatitis, proctitis (1 case), anaphylaxis, agranulocytosis and thrombocytopenic purpura, and a fatal instance of aplastic anemia, but only when other drugs known to elicit these conditions were given concomitantly. Fast EEG activity, usually after excessive dosage. Impairment of visual accommodation. Massive overdosage may produce drowsiness, lethargy, stupor, ataxia, coma, shock, vasomotor and respiratory collapse.

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*Clinically cured included patients with complete symptomatic relief and those who had partial symptomatic relief within 72 hours with subsequent clinical cure.

*Please see
Brief Summary
on next page.*



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Indications For mixed infections which are more susceptible to the combination than to either agent alone. These may include susceptible gram-positive and/or gram-negative mixed infections. Not recommended in the treatment of infections expected to respond to full therapeutic doses of the antibiotic or sulfonamide alone.

Contraindications Known hypersensitivity to erythromycin or sulfonamides. Because of the possibility of kernicterus with sulfonamides, do not use in pregnancy at term, in premature or in newborn infants during first week of life.

Warnings As with other forms of sulfonamide therapy, use only after critical appraisal in patients with liver or kidney damage, urinary obstruction, or blood dyscrasias. Deaths have been reported from hypersensitivity reactions and blood dyscrasias following use of sulfonamides. Perform blood counts and liver and kidney function tests when used intermittently or for long periods.

Precautions, Side Effects Use sulfonamides with caution in patients with a history of allergy, including asthma. Mild allergic reactions (such as urticaria and other skin rashes) may occur. Serious allergic reactions have been extremely infrequent; if encountered appropriate countermeasures (e.g. epinephrine, steroids, etc.) should be administered and the drug withdrawn. Assure adequate fluid intake to prevent crystalluria and institute alkali therapy if indicated. In prolonged therapy, or when high dosage is used, maintain an alkaline urine. If oliguria occurs, discontinue therapy. Occasionally mild abdominal discomfort, nausea or vomiting may occur with erythromycin; generally improved by reduction of dosage.

If overgrowth of nonsusceptible organism occurs, withdraw the drug and institute appropriate treatment.

Adverse Reactions Sulfonamide therapy may be associated with headache, nausea, vomiting, diarrhea, hepatitis, pancreatitis, blood dyscrasias, neuropathy, drug fever, skin rash, urticaria, injection of the conjunctiva and sclera, petechiae, purpura, hematuria and crystalluria.

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Report on Confidential Inquiries into Maternal Deaths in the District of Columbia, 1950-1964*

C. K. FRASER, M.D., F.A.C.S., F.A.C.O.G.†

THIS REPORT is the third in a series, each covering a 5-year period, of investigation into the causes of maternal deaths, 1950-64. The basic tables of the earlier reports are included for comparison in this narrative, and in some areas totals will reflect the 15-year period.

It is well to appreciate that Washington, D. C. is Company Town, U.S.A., its major industry—the Federal Government. Washington is 66 per cent nonwhite. It is the only major city in the United States where whites are a minority. From the end of World War II, and especially since 1954, the year of the Supreme Court decision on school segregation, there has been an in-migration of nonwhites to the core of the city and an out-migration of whites to suburbia. The significance of this migration as it relates to deliveries is shown in table 1.

TABLE 1. Deliveries by Race and Year of Occurrence in the District of Columbia

Year	Total	White	Nonwhite
1950-54	155,677	101,201	54,476
1955-59	166,592	99,947	66,645
1960-64	165,949	92,121	73,828

Table 2 (maternal deaths by race and year of occurrence) brings into focus factors related to population change. It also makes evident the need

TABLE 2. Maternal Deaths by Race and Year of Occurrence in the District of Columbia

Year	No. Deaths	White	Nonwhite
1950-54	103	38	65
1955-59	106	38	68
1960-64	131	33	98
TOTALS	340	109	231

to improve the kind of maternity care that a large segment of our population is receiving.

The poor in this population shift are not invisible to welfare and health authorities. We are now experiencing the influence of Federal-state-local government relationships and medical care.

Public Law 88-156, signed by the late President Kennedy, authorizes Federal funds, on a project basis, to assist state and local health departments in meeting the costs of administering programs of comprehensive maternity and infant care.

The Commissioners of the District of Columbia, under the provisions of PL 88-156, issued an order, September 29, 1964 that complete prenatal care shall be provided in the public hospitals and clinics under the jurisdiction of the Department of Public Health and in private contract hospitals at public expense for residents of the District of Columbia without charge, unless voluntary payments are made.

The new Medical Assistance Program, authorized by the 1965 amendments to the Social Security Act under Title XIX, contains obstetric implications. It features special projects such as reaching cases at risk and carrying them through their pregnancy. This operation depends on states' eligibility but is suited to provide and maintain quality care.

The value of these expanded Medical Assistance Programs can be measured only by vital statistics reporting at state, county and city levels. Only by this type of recall can meaningful comparisons, in

* This 15-year report of the Obstetric Board of the Medical Society of the District of Columbia was presented by Dr. Fraser, Chairman of the Board, before the Section on Obstetrics and Gynecology of the American Medical Association at its 116th Annual Convention in Atlantic City, N.J., June 19, 1967.

† Associate Clinical Professor of Obstetrics and Gynecology, George Washington University School of Medicine; Administrative Chairman, Obstetrics and Gynecology, Washington Hospital Center. Office: 1835 Eye Street, N.W., Washington, D.C. 20006.

our goal of reducing infant and maternal mortality, be achieved.

May I close my preface with one further observation. Chart 1 presents total reporting without mention of color or race. I believe that failure to

the nonwhite group in the latter period. The 1960-64 period is significant and mirrors my prior narrative. The total of maternal deaths rose to 131 (white, 33 and nonwhite, 98). The deaths during 1950-64 totaled 340 (white, 109 and nonwhite, 231).

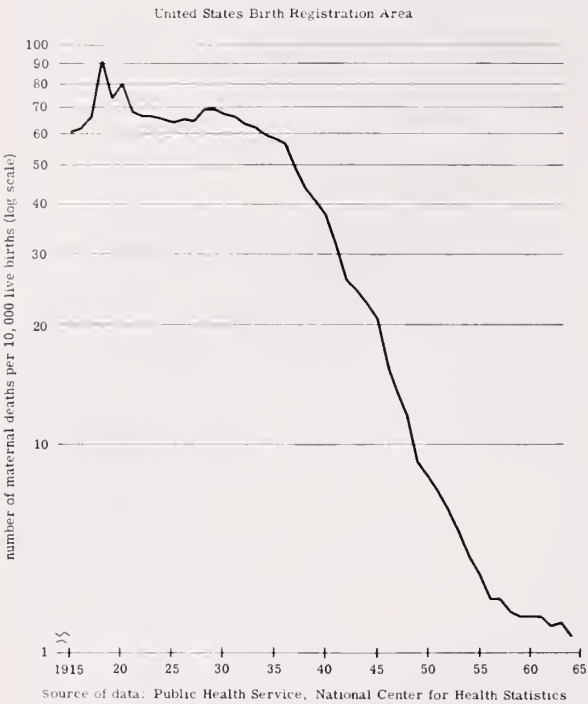


CHART 1. Maternal mortality, 1915-1964.

note color or race in tabulating maternal deaths would be a disservice to mothers of the future. The areas of need for medical assistance, improvement in medical care, and organization are sharply delineated. The present methodology of vital statistics reporting must be maintained to assure effective improvement of maternity services when that need is evident.

Maternal Deaths by Year of Occurrence, Residence and Race

The total of maternal deaths for the period 1950-54 is closely comparable to that of 1955-59 (table 3) with the exception of a slight increase in

**Primary Causes of Maternal Deaths
1950-1964**

The primary causes of maternal death in the specified periods (table 4) have undergone some changes in their relative importance but the numbers are too small for actuarial significance. They rank in this order for the total exercise: hemorrhage, infection, vascular accidents, toxemia, vascular disease, pulmonary-tract disease, anesthesia, and cardiac disease.

For purposes of comparison the tables of each 5-year period demonstrate that hemorrhage and infection (septic abortion) rank 1 and 2. Toxemia has been reduced.

**Maternal Deaths Directly Related to
Pregnancy**

Maternal deaths directly related to pregnancy by cause in the 3 specified periods totaled 208 (table 5). They rank in this order: hemorrhage, toxemia, infection, vascular accidents, and anesthesia. These categories will be discussed later.

**Maternal Deaths Indirectly Related
to Pregnancy**

The total for all years is 81 (table 6). These deaths, ascribed to cardiac, vascular, urinary tract, hepatic and pulmonary disease, will be discussed later in clinical groupings.

**Maternal Deaths Classified as Due to Non-
obstetric Causes by Specified Period:
District of Columbia 1950-1964**

A total of 47 maternal deaths due to non-obstetric causes (table 7) are recorded, 1950-1964. Pregnancy and associated malignancy will be

TABLE 3: Maternal Deaths by Year of Occurrence, Residence and Race: District of Columbia, 1950-1964

	All Years			1950-1954			1955-1959			1960-1964		
	Total	White	Nonwhite	Total	White	Nonwhite	Total	White	Nonwhite	Total	White	Nonwhite
Total	340	109	231	103	38	65	106	38	68	131	33	98
Resident	252	42	210	73	17	56	79	17	62	100	8	92
Nonresident	88	67	21	30	21	9	27	21	6	31	25	6

TABLE 4: Primary Causes of Maternal Death by Specified Periods: District of Columbia, 1950-1964

Cause of Death	Total All Years			1950-1954			1955-1959			1960-1964		
	Number	Rank	Per cent	Number	Rank	Per cent	Number	Rank	Per cent	Number	Rank	Per cent
Total	340	—	100.0	103	—	100.0	106	—	100.0	131	—	100.0
Hemorrhage.....	79	1	23.2	25	1	24.3	23	1	21.7	31	1	23.7
Infection.....	66	2	19.4	17	2	16.5	21	2	19.8	28	2	21.4
Toxemia.....	27	4	7.9	11	3	10.7	7	4	6.6	9	4	6.9
Vascular accidents.....	31	3	9.1	7	4	6.8	8	3	7.5	16	3	12.2
Vascular diseases.....	22	5	6.5	7	4	6.8	8	3	7.5	7	5	5.3
Pulmonary-tract disease.....	21	6	6.2	5	5	4.8	7	4	6.6	9	4	6.9
Cardiac disease.....	11	8	3.2	4	—	3.9	7	4	6.6	—	—	—
Anesthesia.....	13	7	3.8	3	—	2.9	5	5	4.7	5	—	3.8
All other causes.....	67	—	19.7	22	—	21.4	19	—	17.9	26	—	19.8
Cause undetermined.....	3	—	0.9	2	—	1.9	1	—	0.9	—	—	—

TABLE 5: Maternal Deaths Directly Related to Pregnancy by Cause and Specified Periods: District of Columbia, 1950-1964

Cause of Death (AMA Diagnostic Classification)	Total All Years		1950-1954		1955-1959		1960-1964	
	Number	Per cent	Number	Per cent	Number	Per cent	Number	Per cent
Total	208	100.0	69	100.0	62	100.0	77	100.0
A. Hemorrhage due to:.....	75	36.1	25	36.2	23	37.1	27	35.1
Ectopic pregnancy.....	24		9		5		10	
Abortion.....	15		2		7		6	
Rupture of uterus.....	8		1		5		2	
Premature separation of placenta.....	6		3		2		1	
Postpartum uterine atony.....	4		3		1		—	
Placenta praevia.....	2		—		1		1	
Retained secundines.....	1		1		—		—	
Laceration of uterus.....	1		1		—		—	
Laceration of vagina.....	2		1		—		1	
Coagulation of defect.....	1		—		1		—	
Incompatible blood transfusion.....	3		1		1		1	
Other hemorrhages.....	8		3		—		5	
B. Toxemia classified as:.....	27	13.0	11	15.9	7	11.3	9	11.7
Eclampsia.....	14		8		3		3	
Toxemia superimposed upon hyper-tension.....	5		2		2		1	
Unclassified toxemia.....	8		1		2		5	
C. Infection resulting from:.....	58	27.9	16	23.2	19	30.6	23	29.9
Abortion.....	47		15		12		20	
Puerperal reproductive-tract.....	9		1		5		3	
Ectopic pregnancy.....	1		—		1		—	
Renal infection during pregnancy.....	1		—		1		—	
D. Vascular accidents.....	21	10.1	6	8.7	6	9.7	9	11.7
Amniotic fluid embolism.....	8		1		3		4	
Puerperal nonseptic embolism.....	5		—		3		2	
Air embolism.....	5		2		—		3	
Other vascular accidents.....	3		3		—		—	
E. Anesthesia.....	13	6.3	3	4.3	5	8.1	5	6.5
Delivery complicated (by adverse ef-fects).....	13		3		5		5	
F. Other causes.....	14	6.7	8	11.6	2	3.2	4	5.2
Cardiac failure.....	13		7		2		4	
Pulmonary edema.....	1		1		—		—	

TABLE 6: Maternal Deaths Indirectly Related to Pregnancy by Cause and Specified Periods:
District of Columbia, 1950-1964

Cause of Death (AMA Diagnostic Classification)	Total All Years		1950-1954		1955-1959		1960-1964	
	Number	Per cent	Number	Per cent	Number	Per cent	Number	Per cent
Total	81	100.0	24	100.0	26	100.0	31	100.0
A. Cardiac disease	10	12.3	4	16.7	6	23.1	—	—
Rheumatic heart disease	5		2		3		—	
Other heart disease	5		2		3		—	
B. Vascular disease	32	39.5	7	29.2	7	26.9	18	58.1
Vascular embolism and thrombosis	10		1		2		7	
Other vascular diseases:								
Cerebral vascular hemorrhage	11		4		3		4	
Ruptured aneurysm	11		2		2		7	
C. Reproductive-tract disease	—		—		—		—	
D. Urinary-tract disease	8	9.9	1	4.2	2	7.7	5	16.1
Pyelonephritis	2		—		1		1	
Other (polycystic kidney, congenital)	6		1		1		4	
E. Hepatic disease	4	4.9	—		1	3.8	3	9.7
F. Pulmonary disease	7	8.6	1	4.2	6	23.1	—	
Tuberculosis	4		1		3		—	
Other pulmonary diseases:								
Influenza	2		—		2		—	
Acute bronchitis	1		—		1		—	
G. Metabolic disease (diabetes mellitus)	2	2.5	—		2	7.7	—	
H. Other	18	22.2	11	45.8	2	7.7	5	16.1

TABLE 7: Maternal Deaths Classified as Due to
Nonobstetric Causes by Specified Period:
District of Columbia 1950-1964

Nonobstetric Cause	Period in Which Death Occurred			
	Total All Years	1950-1954	1955-1959	1960-1964
Total All Nonobstetric Causes	47	8	16	23
Per cent of Total—All Causes	13.8	7.8	15.1	17.6
Leukemia	5	—	4	1
Brain hemorrhage	3	1	2	—
Malignancy	13	2	1	10
Pneumonia	11	2	1	8
Polioomyelitis	2	1	1	—
Tuberculosis	2	2	—	—
Cardiac disease	1	—	1	—
Murder	2	—	1	1
Pancreatitis	2	—	1	1
Ruptured aneurysm	1	—	1	—
Septicemia	2	—	1	1
Ulcerative colitis	1	—	1	—
Urinary-tract disease	1	—	1	—
Asthma	1	—	—	1

Maternal Deaths Directly Related to Pregnancy by Cause

Clinical categories and discussion, with emphasis on avoidable factors by rank, follow.

Hemorrhage. The clinical discussion (table 5), all periods, is based upon 75 deaths, 36.1 per cent from hemorrhage. During the years 1950-54 there were 25 deaths ascribed to this cause. In order of their frequency ectopic pregnancy, premature separation of the placenta, postpartum uterine atony, and abortion are noted. From 1955 to 1959 deaths totaled 23. Abortion, ectopic pregnancy, and rupture of the uterus rank together. In the 1960-64 period 27 deaths were ascribed to hemorrhage. Ten patients died from ectopic pregnancy and 6 patients from abortion. Hemorrhage due to ectopic pregnancy occurred in 24 patients, 1950-64. This is a high number.

There were several instances in our schedule of the extrapolation which follows:

"Patient pronounced dead on arrival at hospital. The only history available is that the patient thought that she was pregnant and had been having abdominal pain.

"Autopsy performed by Coroner:

"Abdominal cavity contained approximately 1,500 c.c. of blood and 500 c.c. of clots situated in pelvis. Left

discussed in a later setting. Although 2 murders are recorded in this schedule there were no suicides.

Fallopian tube had ruptured in middle third; embryo measured 1 inch in length.

"Cause of death: hemorrhage from ruptured tubal pregnancy."

It is generally thought to be law that an adult person of sound mind can legally allow death to occur rather than choose to take certain positive steps to prevent it. But this cause of death is not the task of the moralist and law-makers. Death in this patient was assessed as avoidable. But more important, this is the type of patient whom we as physicians have not reached with our own educational programs for expectant motherhood.

Ectopic pregnancy is a surgical emergency. Delay in diagnosis and surgery contributes heavily to death. Factors in avoidability were largely errors in judgment in recognition of the condition, failure to adequately treat the initial shock, and, more important, neglect by the patient to consult a physician at the onset of abnormal symptoms which should be obvious at a layman's level.

But is this a true maternal death? Is not ectopic pregnancy, in the main, outside the scope of the maternity? The study of this cause even when joined with avoidability contributes little to improvement of maternity services.

In the entire period there were 15 deaths from hemorrhage due to abortion. In my schedules these are not deaths following spontaneous abortion but rather deaths following procured abortion. When one adds the 47 deaths caused by infection resulting from abortion to the deaths from hemorrhage it is a grim picture indeed.

Under this cause hemorrhage due to rupture of the uterus was noted in 8 patients. It ranks 1 in 1950-54, 5 in 1955-59, and 2 in 1960-64. It was associated with labor, intrauterine manipulation, and questionable use of oxytocic drugs. The obstetrician must be mindful of age, parity, previous uterine surgery, and attendant hazards of abnormal presentation. The factors needed to avoid this complication are obstetric judgment and consultation or earlier consultation.

Accidental hemorrhage 1950-64. Premature separation of the placenta occurred in 6 patients. This is the area of toxemic and nontoxemic patients, but the deaths are ascribed to hemorrhage. There were 2 deaths ascribed to placenta praevia.

The avoidable factors include inadequate or no prenatal care—the failure of the patient to recognize the warning signal of genital bleeding or the physician's failure to demonstrate his awareness and to apply the principles of treatment of acute renal insufficiency and/or coagulation defect as the situation warranted.

In the total period there was 1 death attributed to coagulation defect and 3 to incompatible blood transfusions. An anti-Lewis factor was not detected in 1 instance.

Hemorrhage due to postpartum atony caused 4 deaths. This cause was not noted during the 1960-64 period.

Generally there is improvement in the management of the third and fourth stages of labor, but the lack of appreciation of the seriousness of the condition and a possible coagulation defect still remain the primary avoidable factors. There were no instances in which death was caused by delay in removing the placenta.

Deaths from hemorrhage, 1950-64, do not demonstrate a rise or fall, but the deaths ranked as ectopic pregnancy and abortion are disturbing, the avoidability factor being high.

Toxemia of pregnancy. The 27 deaths so tabulated for the 1950-64 period are classified: eclampsia 14, toxemia superimposed upon hypertensive vascular disease 5, and unclassified toxemia 8. The numbers are small but represent 13 per cent of the deaths directly related to pregnancy.

The 3 deaths, 1960-64, ascribed to eclampsia revealed at autopsy: patient 1—cerebral hemorrhage, left hemisphere, massive; patient 2—subdural hemorrhage; patient 3—acute congestive failure.

Certainly the avoidable factors are not those we associate with quality care. The factors were due to absence of, or inadequate prenatal care.

The patient's attitude is important, since many made no attempt to arrange for their care during pregnancy. The risk to the patient who fails to keep her follow-up appointment should be stressed. The availability of accessible clinics for the type of patient requiring public service is being implemented. These needs are being met not only by additional clinics but also by the obstetric facilities of contract hospitals.

Shortage of community hospital beds does not provide an avoidable factor in this series. The fact that patients have been admitted for treatment and discharged undelivered, only to return in critical condition, is unwarranted and should be avoided under expanded medical assistance programs.

Infections. Puerperal sepsis in the total series is largely due to the abortion that was induced either by the patient herself or by some other person. Self-induced and therapeutic abortions fall within the province of the Board for analysis. There were 2 deaths, in the total exercise, consequent to therapeutic abortion.

The death rate for therapeutic abortion in this area is small, but therapeutic abortion is not without risk. The number of women who had illegal abortions and survived is not known, and it is not possible, save by speculation, to determine whether there has been any change in the actual death rate due to this cause.

Tabulation for the total 1950-64 period shows infection resulting from abortion in 47, puerperal reproductive tract in 9, ectopic pregnancy in 1, and renal infection during pregnancy in 1.

Methods used to procure abortion and the accompanying causes of death include uterine injections of soapy fluid or lysol, with resulting complications of air embolism, shock, hemorrhage, and *C. welchii* infection. Instrumental interference with catheters, frozen and non-frozen, coat hangers, and slippery elm are associated with the following sequelae: rupture of the uterus, septicemia, pulmonary embolism, cerebral infarction, anuria, and bacteremic shock. In 4 patients the use of intravaginal potassium permanganate was associated with but not established as the cause of death.

This type of patient receives every kind of attention in the hospital to preserve life, including blood transfusions, antibiotics, blood and genital-tract cultures, roentgen study for foreign body, occasionally hysterectomy, and the clinician must anticipate renal insufficiency and other complications of shock. There were no abortion deaths ascribed to hydatidiform mole.

The Board regards those deaths resulting from procured abortion as avoidable, with assessment to the patient or persons unknown. But does this type of avoidability contribute to the improvement of maternity services? They do cry out for enhancement of our educational programs for expectant mothers.

Vascular accidents. The deaths in this section are shown in table 4. The 1950-64 experience reveals 8 deaths assigned to amniotic fluid embolism, 5 to puerperal nonseptic embolism, 5 to air embolism, and 3 to other vascular accidents.

Vascular disease with associated vascular thrombosis and embolism will be discussed as an indirect cause of maternal death.

Deaths from air embolism in 3 instances were due to the vaginal injection of some fluid under pressure to procure abortion. The deaths were adjudged avoidable. In 1 death the pathologic evidence of the cause of death was clear, but the mechanism was open to doubt and finally assigned to the performance of the postpartum exercise—knee-chest posture.

One woman died suddenly from air embolism following operation for abdominal pregnancy. The cause was found at autopsy. This death was adjudged unavoidable.

Amniotic fluid embolism. There were 8 cases proved by histologic examination of the lungs; 4 occurred in 1960-64. The absolute and presumptive diagnosis of amniotic fluid embolism requires emphasis for identification leading to statistical purposes, the rise and/or fall in numbers and therapeutic modalities which may be utilized in this acute episode.

An absolute diagnosis depends on demonstrating by histologic examinations of the maternal lungs that the capillaries contain a significant amount of particulate matter of fetal origin.

"A presumptive diagnosis of amniotic fluid embolism can be justified by the following clinical observations:

1. A sudden collapse of the patient at some time after a break in continuity of the membranes, usually during labor. This collapse is characterized by dyspnea and cyanosis.

2. If the patient does not die immediately from shock, blood coagulation failure generally supervenes and should be looked for, particularly (either before or after death) in all cases in which amniotic fluid embolism is suspected.

3. Blood coagulation failure may be the first evidence that an infusion of liquor amnia has occurred, since there may be no dramatic clinical effects at the time of the infusion. In these cases the coagulation failure is unlikely to become manifest until delivery is complete."*

None of the 8 deaths in the total 1950-64 period was considered to have avoidable factors.

Anesthesia. In the 2 previous reports the number of maternal deaths due to the complications of anesthesia were 8 in 1950-59 and 5 in 1960-64. Inhalation of stomach contents was the main cause of death associated with inhalation type anesthesia. Intubation of the trachea was not recorded in these deaths even though its performance is not an absolute safeguard. Spinal anesthesia contributed to 3 deaths due to the lack of prudent safeguards after the anesthetic agent was administered.

There are numerous avoidable factors in this area, shared largely by the physician, due to errors of judgment and technique. In a few instances the hospital shared responsibility for failure to provide an experienced anesthesiologist.

* From Ministry of Health Report 108: "Report on Confidential Enquiries into Maternal Deaths in England and Wales."

Certainly in retrospect, obstetric anesthetic coverage in this area is to be commended, but in certain of these tragedies the risk could have been reduced by the selection of another anesthetic agent and the adherence to established reasonable standards in its administration.

Cardiac failure. Deaths ascribed to this cause ranked 13 for the total period 1950-64. They occurred generally in the area of major obstetrics from complications resulting from the chain of events initiated by the complications or the intervention required.

In the 1950-59 period anesthesia played a significant role in 3 patients. Failure to progress in labor with vaginal operative interference resulted in 2 deaths. Two patients were assigned to this cause following cesarean section. One patient died on the fifth postpartum day after a spontaneous delivery.

In the 1960-64 period 2 patients each were assigned to cardiac arrest—neurogenic and cardiorespiratory failure. In the total period 9 deaths were assessed as containing avoidable factors, and in general the responsibility was assigned to the physician, physician and hospital, and that vague area, all others.

Maternal Deaths Indirectly Related to Pregnancy by Cause

Cardiac and vascular diseases, congenital malformations of the circulatory system, urinary tract, hepatic and pulmonary diseases will engage our attention.

Cardiac disease. In the 2 periods 1950-54 and 1955-59 there were 10 deaths ascribed to cardiac disease. No patient was assigned to this cause in the 1960-64 period. The discussion of the avoidable factors of the previous reports is repeated in the hope that it may aid in the elimination or continued education in this cause of maternal death.

The nature of the cardiac lesion revealed 5 patients with rheumatic heart disease and 5 with other forms of heart disease.

Avoidability was assessed 5 times in this series, in 2 instances to the physician only and in 2 to the patient only. In 1 case the responsibility was shared by the physician and the patient.

Wisdom is required in managing this complication of pregnancy. The patient's attitude, medical consultations, the need for conscientious prenatal care, an efficient checkup for non-attenders at the clinic, and suitable arrangements for rest prior to confinement are all essential factors. The expanded

medical service programs should be fully utilized in cardiac disease.

Vascular disease. In period 1 and period 2 vascular embolism following venous thrombosis, cerebral vascular hemorrhage, and ruptured aneurysm share an even distribution, totaling 14 deaths from these causes. Comparable figures for 1960-64 are significantly higher, totaling 18 patients and ascribed to vascular embolism in 7, cerebral vascular hemorrhage in 4, and ruptured aneurysm in 7. Assigned to the total exercise, 1950-64, there were 32 deaths from these causes.

Deaths due to venous thrombosis and embolism may be due to lack of awareness of the predisposing condition. The infection may be mild and not sufficient to produce obvious symptoms, yet it is of importance in the production of fatal embolism. Anticoagulant therapy and selected vessel ligation may be considered a matter of clinical judgment.

Avoidable factors ascribed to this cause were shared by the physician only in 5, the patient only in 8, and the physician and hospital in 4.

Cerebral vascular hemorrhage. This complication occurred in an even distribution in the 3 periods, that is, 4-3-4 fatal outcomes. These deaths are usually associated with severe toxemia. Defection in clinic attendance was by far the most serious and frequent avoidable factor.

Ruptured congenital aneurysm. Two deaths each were assigned in the 1950-54 and 1955-59 periods and 7 for 1960-64.

It is problematical whether to consider this condition one of pregnancy complicated by aneurysm or aneurysm complicated by pregnancy. My observations lead me to believe that the primary condition is aneurysm, which was subsequently complicated by and in turn, to some extent, complicated the pregnancy. In this series the rupture occurred early or late in pregnancy but was rarely associated with labor. Deaths assigned to this cause involved the aorta in 1, the splenic and renal artery each in 1, and the cerebral vessels in 8.

The avoidable factor suggests that the accoucheur be aware of this possibility.

Urinary-tract disease. Four deaths were ascribed to congenital polycystic kidney. The status of renal function is the measure of a continued pregnancy. If renal failure is not present, interruption of the pregnancy may be avoided; conversely, if renal function is impaired with developing hypertension, interruption must be considered.

Hepatic disease. Hepatic disease is noted in only 1 instance in the 1950-59 period of study. For the total period there were 3 deaths assigned to pancreatitis and 4 to hepatic disease.

Pulmonary disease. No deaths due to tuberculosis or influenza are recorded for the 1960-64 period.

Other causes. Other causes of death indirectly related to pregnancy include appendicitis, 4; peritonitis (nonpuerperal), 6; postpartum hemorrhagic diathesis, 2; and, significantly, the second patient in the total series dying from complications assigned to chickenpox. In both patients there were associated pulmonary complications.

Maternal Deaths Classified as Due to Malignancy, 1950-64

These deaths warrant more than passing interest and are presented in table 8. The type and diversity of the malignancy are readily identified.

In a paper of substance, "Cancer of the Cervix and Pregnancy" by Cromer and Hawken,¹ by confidential inquiry in the District of Columbia the authors reviewed 860 case histories of patients with pelvic cancer from October 1957 through April 1962. They identified 20 patients with cancer of the cervix, 16 with invasive cancer, and 4 with in situ disease associated with pregnancy. There were no maternal deaths reported in their study. The incidence of pregnancy and associated malignancy is vague. My schedule may be helpful in this respect.

Method of Delivery by Place of Death 1950-64

From this area, one subject, cesarean section, has been chosen since it provides material of con-

TABLE 8: Maternal Deaths Classified as Due to Malignancy by Age, Parity, Fetal Outcome, and Method of Delivery: District of Columbia, 1950-1964

Type of Malignancy	Age	Parity	Fetal Outcome	Method of Delivery
1958:				
1. Choriocarcinoma, uterus with metastasis	31	3	Tubal pregnancy, 2 months' gestation	Perforation of uterus with massive hemorrhage
2. Epidermoid carcinoma of cervix uteri, grade III with metastasis	33	6	3 lbs. 3 oz. neonatal death, 5 wks.	Cesarean section
3. Carcinoma of breast with metastasis	43	6	4 lbs. 11 oz. viable fetus	Classical cesarean section without anesthesia
1960:				
4. Massive metastasis of lungs due to malignant mesenchymoma of right leg	29	5	Living twins	Home delivery
5. Glioblastoma of brain	30	1	Premature infant, lived 24 hours	Classical cesarean section
6. Adenocarcinoma of breast with bony metastases	37	5	1 lb. 14½ oz. stillbirth	Postmortem cesarean section
7. Metastatic adenocarcinoma, primary site undetermined	33	10	Living fetus 3 lbs., lived 24 hours	Spontaneous normal delivery
1961:				
8. Carcinoma of liver; carcinoma of colon	36	10	2 lbs. 10 oz. infant	Spontaneous after 30 minutes of labor
9. Bronchogenic carcinoma	36	Not known—due to lack of physician cooperation		
1962:				
10. Metastatic carcinoma, primary site undetermined	25	3	6 lbs. 4 oz. stillbirth	Not stated
1963:				
11. Metastatic carcinoma of pancreas	22	1	Premature infant 3 lbs. 4 oz.; living	Spontaneous delivery
12. Choriocarcinoma, uterus	19	2	Stillbirth, 38 wks.	Normal delivery
1964:				
13. Bronchogenic carcinoma, right lung	36	4	Single birth, viable	Not available
14. Brain tumor, rupture of cerebellar pressure cone	30	Not available—no protocol		

The age of the mother varied from 19 to 43 years. Parity is recorded from 1 to 10 pregnancies. There was some fetal salvage. The method of delivery included 4 cesarean sections, 1 of these post-mortem.

siderable clinical interest. These deaths are associated with but not necessarily due to cesarean section. The deaths are attributed, for the most part, to the condition for which the operation was undertaken.

There were 42 deaths associated with cesarean section during the total period. This number includes 12 postmortem cesarean sections, with initial fetal salvage of 6 live births and 6 stillbirths. Three live infants died at intervals of 1, 2 and 6 hours, hence were nursery or neonatal deaths. Three viable siblings were salvaged in the total performance of 12 postmortem cesarean sections.

There are medicolegal implications and physician obligations. If the emergency permits, as in all surgery, one should obtain consent to operate.

Postmortem Examinations Performed in Cases of Maternal Deaths 1950-64

These inquiries cover 340 deaths assigned to this study (table 9). Autopsies were performed in

TABLE 9: Postmortem Examinations Performed on Maternal Deaths: District of Columbia, 1950-1964

Autopsy	Year			Total	Per cent of Total Patients	Per cent of Total Reported
	1950-1954	1955-1959	1960-1964			
TOTAL.....	103	106	131	340	100.0	
Total reported...	102	105	130	337	99.1	100.0
Yes.....	85	91	113	289	85.0	85.8
No.....	17	14	17	48	14.1	14.2
Unknown....	1	1	1	3	0.9	

289 patients, or 85 per cent, and were not accomplished in 48, or 14 per cent. Five are recorded as unknowns.

The majority of the postmortem examinations performed included final autopsy reports with microscopic findings. In the remainder the recorded causes of death were based upon gross autopsy findings.

Legitimacy as a Factor in Maternal Deaths

The data relating to legitimacy of birth in the 3 5-year periods, 1950-64, is contained in table 10.

TABLE 10: Maternal Deaths Showing Per cent Distribution of Outcome of Total Pregnancies by Legitimacy Classification: District of Columbia, 1950-1964

Legitimacy	Per cent Distribution of Outcome				
	Live Births	Fetal Deaths	Abortions	Un-delivered	Not Reported
TOTAL.....	37.6	17.1	20.6	19.4	5.3
Legitimate.....	45.7	20.4	13.5	16.1	4.3
Illegitimate.....	24.4	12.8	33.7	20.9	8.1
Legitimacy not reported.....	8.3		41.7	45.8	4.2

This table is presented in percentage distribution of outcome by total pregnancies and legitimacy classifications.

Of the 340 maternal deaths, 230 were of married women, 86 were unmarried, and in 24 mothers legitimacy was not reported.

For the group of 230 married mothers there were 105 live births, 47 stillbirths, 31 abortions, 37 undelivered, and 10 not reported.

For the 86 unmarried mothers there were recorded 21 live births, 11 stillbirths, 29 abortions, 18 undelivered, and 7 not reported.

For the 24 mothers with legitimacy not reported, there were recorded 2 live births, 10 abortions, 11 undelivered, and 1 not reported.

There are important factors contributing to illegitimacy which are beyond the scope of this report.

Maternal Deaths by Parity 1950-64

In the total exercise, 1950-64 (table 11), of the women who died from puerperal causes the number of pregnancies per woman presented some variations. Those who died rank in this order: pregnancy 2, pregnancy 1, pregnancy 3, pregnancy 5, pregnancy 4, and pregnancy 6. This table is complete, with the total for all years being 340 deaths.

TABLE 11: Maternal Deaths by Parity, 1950-1964

Gravida	No. Deaths All Causes
1	45
2	56
3	42
4	27
5	31
6	16
7	8
8	9
9	9
10	8
11 or more	9
No entry	80
TOTAL— all years	340

Avoidable Maternal Deaths by Race and Lapse of Time between Delivery and Deaths 1950-64

Avoidable maternal deaths totaled 163 (table 12). By race, there were 32 white and 131 non-white mothers.

The interval between termination of pregnancy and death ran proportionately higher in the nonwhite group.

TABLE 12: Avoidable Maternal Deaths by Race and Lapse of Time Between Delivery and Death: District of Columbia, 1950-1964

Lapse of Time	Total		White		Nonwhite	
	Number	Per cent	Number	Per cent	Number	Per cent
TOTAL	163	100.0	32	100.0	131	100.0
Under 1 day	35	21.5	8	25.0	27	20.6
1-7 days	25	15.3	6	18.8	19	14.5
8-60 days	13	8.0	5	15.6	8	6.1
Abortion	55	33.7	6	18.8	49	37.4
All other	35	21.5	7	21.9	28	21.4

Avoidable Maternal Deaths by Race and Responsibility Assignment, District of Columbia, 1950-64

Reports of 340 deaths ascribed to pregnancy, child birth, and the puerperium were assigned to this study for the years 1950-64. Of the 340 deaths, assessment revealed 163 with avoidable factors and they are classified as avoidable deaths (table 13). Thirty-two mothers were white; 131 were non-white.

TABLE 13: Avoidable Maternal Deaths by Race and Responsibility Assignment: District of Columbia, 1950-1964

RESPONSIBILITY ASSIGNMENT	Total		White		Nonwhite	
	Number	Per cent	Number	Per cent	Number	Per cent
Preventable deaths	163	100.0	32	100.0	131	100.0
Physician only	35	21.5	10	31.3	25	19.1
Patient only	74	45.4	9	28.1	65	49.6
Physician and hospital	19	11.7	6	18.8	13	9.9
Physician and patient	17	10.4	3	9.4	14	10.7
All other	18	11.0	4	12.5	14	10.7

There are many salient lessons contained in this table, but most of the avoidable factors were the responsibility of individuals. It should be emphasized that these data do not assign responsibility for a death, but they do assign responsibility for the avoidable factors to one person or the sharing of this responsibility.

Deaths with avoidable factors were assigned as follows: to the physician only, 35; to the patient only, 74; shared by physician and hospital, 19; shared by physician and patient, 17; and all others, 18.

The risk of death in pregnancy is now small. Further reduction in maternal deaths now depends

almost as much on the parturient herself as on the services provided. May I reiterate that in those patients in which avoidable factors were adjudged present, death could have been prevented. Had the avoidable factor been controlled, the risk of death could have been materially lessened.

Maternal Deaths Occurring in Specified Hospitals by Avoidability 1950-64 (Table 14)

TABLE 14: Maternal Deaths Occurring in Specified Hospitals by Avoidability: District of Columbia, 1950-1964

Hospital	Number of Deaths by Avoidability		
	Total	Avoidable	All Other
TOTAL	340	163	177
A	15	7	8
B	100	58	42
C	36	18	18
D	36	14	22
E	23	3	20
F	22	9	13
G	23	8	15
H	51	23	28
I	34	23	11

D.C. Department of Public Health, Biostatistics Division.

It is not possible to make a strict statistical comparison of the rate of errors among maternity services. The inherent difficulty is that the respective opportunities for making a major error cannot be determined with precision.

On the other hand, maternity sources caring for patients known to carry a high risk would have the opportunity of making errors where errors are likely to have serious results.

Recommendations to the Executive Board of the Medical Society of the District of Columbia

1. Legislation for protection of maternal and perinatal study committees and other medical-audit study committees. The Medical Society of the District of Columbia, with the coöperation of the Department of Public Health, should seek enactment of such legislation. This type of legislation, if enacted, would protect the Obstetric Board from medicolegal implications.

2. This type of legislation would permit the Medical Society of the District of Columbia, with the coöperation of the Department of Public Health, to establish a much needed community perinatal and infant mortality study without fear of medicolegal implications.

3. Procured abortion, a large social problem in the District of Columbia, should receive thoughtful and constructive consideration. A special inquiry form should be prepared, with the coöperation of the Department of Public Health, for extensive investigation of deaths from this cause.

4. The following matter could be referred to the appropriate committee for study: There is no methodology of recall or reporting included in the expanded Medical Assistance Programs. Their value can only be measured by vital statistics reporting. Only by this type of recall can meaningful comparisons in our goal of reducing infant and maternal mortality be achieved.

ACKNOWLEDGMENTS: The members of the Obstetric Board are deeply indebted to its associate members for their untiring energies, to the many consultants for contributing their special skills and advice, and to all who have assisted in any way in preparing this report.

A special source of guidance was the Ministry of Health Report No. 115, "Report on Confidential Enquiries into Maternal Deaths in England and Wales."

The Bureau of Maternal and Child Health and the Bureau of Biostatistics (Todd Frazier, Chief) of the D. C. Department of Public Health were responsible for the statistical classification and summarization.

The National Vital Statistics Division, Public Health Service, U. S. Department of Health, Education, and Welfare, under the direction of E. P. Hunt, Ph.D., prepared the chart on maternal mortality.

Editorial assistance was given by Miss A. Louise Eekburg, Assistant Editor of the Medical Annals of D. C.

In addition to the Chairman, the members of the Board are: Dr. J. Bay Jacobs, Secretary, Drs. Robert H. Barter, Raymond T. Holden, Andrew A. Marchetti, Samuel Shwartz (D. C. Department of Public Health), Alvin F. Robinson (Medico-Chirurgical Society of the District of Columbia), and Coleridge M. Gill† (Howard University College of Medicine).

† Deceased.

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International Certificates of Vaccination

EVERY YEAR more travelers carry the International Certificates of Vaccination form. However, a goodly number of persons fail to complete the form properly. They are willing to take a chance on being detained in quarantine by travel-

ing without this important document that helps to expedite their entry at international ports.

Quarantine authorities at United States ports of entry are becoming more stringent in calling for arriving persons, including United States citizens, to have a valid International Certificate of Vaccination or Revaccination against smallpox.

Dr. William E. Long, Chief of the Epidemiological Services Division, Bureau of Communicable Disease Control, D. C. Department of Public Health, has issued the following instructions to physicians:

1. Information requested on each certificate must be complete for the certificate to be valid.

2. The space for primary vaccination against smallpox is to be used only when a person received his vaccination for the first time, such vaccination to be read as "successful." If unsuccessful a new certificate must be used for a repeat primary vaccination.

3. The dates on each certificate are to be written with the day in arabic numerals, followed by the month in letters and the year in arabic numerals; e.g., October 1, 1966, should be written 1/Oct./66. Manufacturer and lot number of vaccine are required for validation.

4. Vaccinations may be performed by a nurse or medical technician if under a physician's direct supervision. The physician's legibly written signature and address must appear on the certificate; signature stamp is not acceptable.

5. If vaccination is contraindicated the physician should provide the person with a written opinion, which port health authorities may take into account.

6. Official immunization requirements for international travel and the list of designated yellow fever vaccination centers in the United States are contained in the booklet, "Immunization Information for International Travel," PHS No. 384, on sale at the Superintendent of Documents, U. S. Government Printing Office, Washington, D. C. 20402. Changes in requirements may be obtained from local or state health departments.

7. "International Certificates of Vaccination," PHS No. 731, Rev. 9-66, are for sale by Superintendent of Documents, U. S. Government Printing Office, Washington, D. C. 20402, for 10¢ per copy.

8. Additional information concerning certificates and immunization requirements may be obtained from the Epidemiological Services Division, Bureau of Communicable Disease Control, 629-3384 located at 301 C Street, N.W., Room 6150, Municipal Building.

Somatic and Genetic Changes Due to Environmental Pollution*

MIHÁLY BARTALOS, M.D.†

THE TERM ENVIRONMENTAL POLLUTION is here used to implicate substances which are introduced into the environment that are potentially harmful or that interfere with man's use of his environment.

Man and his environment present interacting components forming an ecological system, or ecosystem, for short. If one would like to assess the full significance of any new environmental factor the effect on man as well as on all other components of man's environment should be considered.¹ At this time, however, I shall discuss only the direct effect of environmental pollution on man and the premise that such factors can also affect other living creatures and therefore have an indirect effect on man.

In our environment, pollutants are present in the air, in the water, and in the soil. From these sources our food also becomes contaminated. In addition to these pollutants we are exposed to other foreign materials, of which drugs and cosmetics are the most prominent. According to a 1956 estimate the number of pharmaceuticals in use was about 20,000.² By now this number must surely be regarded as a very conservative figure. In addition to air, water, and soil pollutants and to the effects of drugs and cosmetics, smoking and many food additives are potentially hazardous to health. Let us focus our attention on those pollutants which are present in the air, water, and soil.

Sources of Pollutants in Air, Water, and Soil

The sources of pollutants are varied, but in all instances they are connected with human activities. Air pollution derives from burning fuels for power generation and heating, burning of wastes, automobile exhausts, wear and tear of tires and

brakes, and the handling of materials such as pesticides and herbicides, radioactive isotopes, sand/gravel, and cement. It comes, to some extent, from human activity of every kind.

Pollutants in our water are also of varied origin. Insecticides are among the most important of our water pollutants. It was estimated 6 years ago that there were possibly some 90,000 different insecticide formulations.³ Manufacturing processes of various kinds, the household use of chemicals, and water improvement by the addition of chlorine, fluorine and water softeners, and water evaporation retardants are sources of water pollution.

Pollution of the soil derives from several of the air pollutants and water pollutants. Much of the air pollutants are deposited as soot and dust. It was estimated that in New York City 60 tons of soot and dust are deposited per square mile per month.⁴ Pollution of this extent constitutes not merely discomfort and health hazards but also economic loss. Again, in New York City, economic loss to real and personal property due to air pollution is believed to be as high as \$520,000,000 annually.

Health Hazards

While economic loss due to pollutants in our environment is considerable, the adverse effect of many of the pollutants on the health of the exposed population is worthy of our most serious considerations. As it was stated earlier, pollutants come from different sources and from different human activities. This implies that urban populations are exposed to different pollutants from those of our rural populations. There are also pollutants to which certain occupational groups are especially exposed. The kind and degree of pollution thus depend on the character of the settlement, its geographic and atmospheric characteristics, the type and distribution of industrial complexes within the area, predominant occupation of the inhabitants, and their living and working conditions. Since the extent and nature of the pollution determine the degree of the health hazard it may con-

* Based on a presentation at the National Convention of the Federal Bar Association on September 9, 1966 at the Statler-Hilton Hotel, Washington, D.C. Supported by Special Project Grant Number 414 of the Children's Bureau, U.S. Department of Health, Education, and Welfare.

† Chief, Medical Genetics Unit, Department of Pediatrics, Howard University College of Medicine, Washington, D.C. 20001.

stitute, the above considerations are relevant to any control problems of environmental pollution.

The health hazards presented by pollutants are diverse. Some are deleterious to the individuals exposed to them, while the detrimental effect of others may be manifested mainly in future generations. Even the effects on the exposed individuals may be different for different agents. Thus different environmental pollutants can contribute to the development or the cause of a variety of diseases.

Somatic effects. The irritating effect of many chemicals on the skin is very well known. The eyes likewise are subjected to heavy exposure of air pollutants and can become irritated.⁵ It is estimated that an individual inhales approximately 1.4 million gallons of air per year. In this way, airborne pollutants find their way into our respiratory system and from there many can be transported by the circulation to other parts of the body. The majority of air pollutants exert their effect mainly on the respiratory system by interfering with its normal functioning. It is generally believed that air pollution prominent in our cities increases the susceptibility to common respiratory ailments.⁶ While this fact seems to be firmly established, our knowledge of the way this is accomplished is not sufficient. Heavy atmospheric pollution, as it occurred in 1952 in London and in other places under unfavorable meteorological conditions, can cause acute respiratory irritation leading to death in many instances.⁷

Inhalation of mineral dust results in the deposition of these substances in the lungs, reducing their functional capacity. Silica inhalation increases susceptibility to tuberculosis, in asbestosis cancer of the lung develops quite frequently, while heart failure is a complication in individuals heavily exposed to coal dust.⁸

Radioactive pollutants of the air constitute a special group of health hazards. During his whole history man has been exposed to a certain amount of radiation from the air, mainly in the form of cosmic radiation. Radiation from this source, however, is supported now by fallout of radioactive debris produced by test explosions of atomic weapons in the atmosphere and must be regarded as a potential hazard to our health.⁹

The somatic effects of irradiation consist of malignant tumors, radiation burns, and the so-called radiation syndrome. These latter two result from exposure to larger doses of radiation.¹⁰

The main effect of insecticides on man is of a toxic nature, causing anemia and bleedings or

weakness, vomiting, breathing difficulties, and eventually death due to respiratory failure.

A further health hazard constituted by water pollutants is their ability to cause cancer. Besides insecticides, other water pollutants presenting carcinogenic hazards are arsenic, radioactive chemicals, petroleum and petroleum products, coal tar and tar oils, and chromium and aromatic amino- and nitro-compounds. All of these water pollutants originate from manufacturing processes. Surfactants from detergent-containing sewage, chlorine and fluorine "medication" of dirty water, water softeners, and water evaporation retardants have been considered potential carcinogenic hazards.¹¹

Water pollutants like air pollutants can accumulate in the body and have a prolonged effect on bodily functions. The 300 gallons of liquid which an individual consumes during a year can carry a large amount of damaging substances into the organism which over the years may amount to a serious health hazard.

Pollutants of air, water and soil have yet a different way of getting in contact with human organisms, and that is by using our food as a vehicle. Since organisms tend to "hoard" nutrients, the concentrations of such pollutants in living organisms can greatly exceed that in the immediate physical environment. Thus, for instance, radioisotopes of nutrients can create local radiation fields in cells and tissues more intense than those in the surrounding environment.

Genetic (hereditary) effects. The effects of radiation fields within cells and tissues of the organism are of diverse natures. One of the characteristics of ionizing radiation is the effect on the genetic material of cells. The genetic material is not only responsible for the transmittance of regulatory patterns from one cell to the other, but they also transmit such genetic information from parents to children at the time of conception. Thus, if the genetic material in the reproductive cells is damaged, such damage can be transmitted to future generations. That is where we speak of a long-term or hereditary effect of environmental pollutants on mankind. Besides ionizing radiations, several chemicals have been demonstrated to have the ability to affect the genetic material and to change it. Changes in the genetic material of prospective parents can affect practically every characteristic of the offspring, the most readily recognizable and the most deleterious of which is the production of malformed children. In addition to congenital malformations they may produce changes which are expressed only at the chemical level and result

in more or less normally formed individuals who, however, suffer from diseases which may be debilitating, life-shortening, or cause mental deficiency.¹²

Thus the health hazard of environmental pollution is varied, partly because of the many kinds of pollutants having different modes of action on man and partly because a given agent can have different actions.

Permissible Level

After discussing briefly the kinds of health hazards presented by environmental pollutants it would be desirable to know the permissible level for each of them which would not represent a significant health hazard for the exposed population. For many of the pollutants such standards have been established which can be used as guides for devising protective measures. For other agents, however, such standards are not available. This fact, while it may appear surprising at first glance, will become less so if we consider that human experimentations in this area are not possible. The mode of actions of these agents can be studied in experimental animals, but their verification in man comes when individuals exposed to the agent, accidentally or otherwise, attract the attention of physicians. In such situations the amount of exposure and the duration of the exposure time can be determined and the medical effects ascertained. The development of the disease can be studied by the testimony given by the individuals, and the conclusions can be verified by studying those who are exposed to the same agent for a shorter period of time and are not yet seriously affected.

If the disease in man seems to follow the course established in experimental animals, experimental animals can be used to test potential procedures to counteract the development of the disease. A further handicap in determining a "safe level" of environmental pollutants is that there is an apparent variation in sensitivity to such agents among individuals. Thus, what would be safe for one person may be quite dangerous for another. Age is also an important factor. Older individuals seem to suffer more from environmental pollution in big cities than do younger ones. The preëxistence of other diseases can likewise influence individual sensitivity. Those with a lung ailment will be more affected by a pollutant-induced shortness of the breath than those with normal functioning of the lungs. Thus, if we wish to establish standards which would assure that every member of the population will be free of any deleterious effects—

and this is what we ideally should strive for—we must have extensive experience with each of the environmental pollutants on all kinds of people composing the population in question.

Then still a further problem arises. It may be possible that agents acting at the same time will produce effects which will be different from those produced if they are acting alone. They may act in a simple cumulative fashion, or one of them may lower the resistance of the organism against the other agent. Thus we not only need to know the safety level for each pollutant but should consider the ways they can interact in the organism, which in turn may modify our previously set safety standards.

I much dislike to admit that our knowledge in this area is very limited. An encouraging development is the establishment of the National Environmental Health Sciences Center, the mission of which will be, according to a publication from the U.S. Department of Health, Education, and Welfare,¹³ "the determination, study and evaluation of the effects of environmental factors, singly and in aggregate, upon the health of man in order to gain a better understanding of the complex, inter-related phenomena underlying the human body's reactions to the increasingly wide range of environmental influences imposed by modern living, and with the ultimate objective of devising measures whereby man will not be disturbed by environmental concomitants of technological and social change."

Radiation hazard deserves special mention in this regard. It has been demonstrated that the mode of action of radiation on the genetic material is essentially the same for animals and man. Such studies have shown that radiation-induced genetic defects are not eliminated or repaired in any significant degree. Any new exposure to radiation inflicts a defect which will represent an addition to such previous defects. Thus there appears to be no safe level for radiation of any amount for any period of time and at any time interval. Single large doses of radiation may produce radiation burns, while smaller doses can lead to cancer production and influence the biological value of future generations. Obviously radiation hazard cannot be eliminated because of its widespread and justified use in medicine and in industry. However, no one wants to see the concentrations increased any more than is necessary from the standpoint of useful exploitation of atomic energy and of national security. Permissible levels of radiation, however, have been agreed on and are applied in hospitals and in industry for individuals who are occupa-

tionally exposed to larger amounts of radiations. These serve as guidelines and by no means should be regarded as indicating absolute safety levels.

Counteracting Pollution Health Hazards

Our environmental pollutants can be conveniently grouped into 2 categories: those that represent an increase in volume or rate of introduction of materials that are already present in nature and those that represent an increase in volume or rate of introduction of materials that are not normally present in nature.

If we are dealing with materials which are part of nature, the solution is to reduce the amount of such materials so that nature may be able to take care of them. However, if we are dealing with materials that are not normally present in nature, the task becomes more involved. Here we have several ways to approach the problem. We can attempt to prevent or to minimize its formation, or we can remove it after production but before discharge into our environment; and if it is discharged, we may attempt to diffuse it before it comes into contact with large segments of the population. If individuals are exposed to such agents they may apply protective measures, if available, in order to prevent access to the body. If health is already affected by pollutants, appropriate medical treatment must be applied, if available. Here I have to emphasize that, like all steps listed, the medical measures represent great difficulties. In many instances pollutants are directly responsible for the clinical manifestations, while in other cases the pollutants as such are harmless, but once introduced into the body they are broken down, and the breakdown products may prove to have a damaging effect. It is evident that in such cases the exact mode of metabolic breakdown of the foreign material inside the body must be understood before meaningful treatments can be devised. With the increasing amount of foreign materials being constantly introduced in our environment, including our food, it is almost impossible for medical researchers to keep pace with such development.

Conclusion

In an attempt to conclude this discussion it has to be reiterated that (1) environmental pollutants represent a health hazard, (2) that all parts of the body are vulnerable in variable degrees to environmental pollutants including cells of the reproductive organs as well as cells in the rest of the organism, and (3) that the health hazard in many cases

exists not only for the exposed population but also for their descendants. Large-scale environmental pollution is the result of our modern way of life, and it is here to stay. However, efforts should be made to counteract the deleterious effect of pollutants on man and to curb the rate and amount of their production and discharge in the environment. If we have to live with pollutants, as we do, extensive studies are needed to establish the process by which pollutants interfere with normal functioning of the body, to determine the permissible level for each agent both individually and in different combinations, to detect the role and magnitude of individual variations in sensitivity to these agents, and to devise meaningful medical measures for prevention and cure of pollutant-induced disease. These may be accomplished by increasing the natural resistance of the individual toward the agent, by neutralizing the effects of the agent, by preventing deposition of the material in the body, by speeding up elimination of deposited material from the organism, by healing the lesions inflicted by these agents, or by the use of any combination of these.

Environmental pollution represents a complex problem of considerable magnitude. It is a problem not only for certain individuals or for certain occupation groups, but it affects all of us in varying degrees. Likewise, the responsibility to curb the health hazard represented by pollutants must be the responsibility of everyone. It is indeed impossible to visualize how, for instance, private citizens can institute meaningful devices to counteract pollution health hazards if they do not have the support of government and industries. Likewise, the government or the industries alone would be in a similar situation. We need citizens who understand the problem and are determined to do whatever is needed from them to protect their health; we need the cooperation of industry to curb the production and discharge of pollutants; and we need agencies to support research in this area, to set safety standards, and to enforce them. Environmental pollution represents a new challenge for mankind which must be mastered by him in the interest of his survival. Any decision to be made in this respect today can affect the biological soundness of future generations and will influence the future evolution of mankind. We face a responsibility for future generations of Americans as well as for Americans of today.

Let us hope that this challenge will be faced with wisdom, mutual understanding, and fruitful cooperation by all concerned.

(Continued on page 195)

The Enterohepatic Circulation of Sulfobromophthalein Sodium

Results of a Study on 24 Patients*

SHARAD Y. DESHPANDE, M.D.†

SINCE THE INTRODUCTION of sulfobromophthalein sodium (BSP) in 1925 by Rosenthal and White,¹ the dye has been used extensively in clinical practice as a test for hepatic function. Bromsulphalein has been used also for the determination of cardiac output,^{2, 3} assessment of hepatic⁴ and splanchnic⁵ blood flows, and to measure the activity of rheumatoid arthritis.⁶ Although the dye is used widely, relatively little is known regarding its transport and metabolism, and indeed a clear understanding has not yet been achieved. The importance of enterohepatic circulation of BSP lies in its effect on the interpretation of the clinical BSP test in evaluating hepatic function as well as its possible effects when used for estimation of hepatic and splanchnic blood flows. For this reason the enteric absorption of BSP in man has been studied by few workers.⁷⁻¹⁰ The results of their studies are controversial, and so the present study was undertaken in patients with and without liver disease.

Materials and Methods

Altogether 24 patients, 18 males and 6 females, were selected from the admissions to the Hospital except for 1 normal volunteer. Eleven patients had Laennec's cirrhosis as evidenced either clinically and/or by liver biopsy, 1 had chronic cor pulmonale with hepatomegaly, and the remaining 12 patients did not have any liver disease. Patients with clinical evidence of jaundice, malabsorption syndrome, fever, gastrointestinal hemorrhage, or acute illness were excluded. Since bromsulphalein is bitter it was sweetened and diluted to the total volume of 90 c.c. by the addition of 5 per cent glucose in water and was administered orally in the

dose of 10 mg. per Kg. of body weight. The patients were fasting prior to the test and were supine during the test period. Two blood samples were drawn from each patient at periods of 15, 30, 45, 60, 90, 120, 150 or 180 minutes after the ingestion of BSP. In 10 of the patients, free from the disease of the urinary system, urine was collected at varying periods (these patients completely emptied their bladders just prior to the test). In these samples BSP was detected by Gaebler's method^{11, 12} and was expressed as percentage of retention.

Results

Bromsulphalein was absorbed rapidly after its oral administration and was detected in the serum as early as 15 minutes and as late as up to 180 minutes. In the patients free from liver disease BSP was present in 4 out of 8, 4 out of 6, and 1 out of 3 blood samples which were drawn respectively at 15, 30 and 45 minutes, while in patients with Laennec's cirrhosis BSP was not detected in 3 out of 3, 4 out of 4, 4 out of 5, and 6 out of 6 blood samples which were drawn respectively at 15, 30, 45, and 60 minutes after the administration of BSP (table 1).

The BSP was present in most of the blood samples which were drawn 90 minutes or more (table 2). In the patient with chronic cor pulmonale BSP was detected in serum at 30 minutes and at 45 minutes on another occasion. The dye concentration in the serum was 2 to 3 per cent in 16 out of 21 samples which were positive for BSP.

The BSP was not detected in the urine samples of 9 out of 10 patients (table 3), and therefore the urine of the rest of the patients was not collected.

Discussion

The enteric absorption of BSP was studied in 24 patients in conditions identical to those required for the clinical BSP test of hepatic function. The dye was absorbed after oral administration in

* From the Department of Medicine, Division of Howard University, District of Columbia General Hospital.

† Fellow in Cardiology, Rhode Island Hospital, Providence, R. I. 02902; formerly Junior Medical Resident at District of Columbia General Hospital, Washington, D. C.

TABLE 1: Concentration of BSP in Serum

Patient	Age	Sex	Diagnosis	15 min. after BSP adm. <i>Per cent</i>	30 min. after BSP adm. <i>Per cent</i>	45 min. after BSP adm. <i>Per cent</i>	60 min. after BSP adm. <i>Per cent</i>
S. D.	28	M	Normal volunteer (5 min. after adm. of BSP was 0%)	0	2	—	—
O. N.	76	M	Chronic bronchitis with coin lesion in lung	5.5	0	—	—
J. R.	25	M	Sickle-cell anemia	0	0	—	—
G. J.	30	F	Right lower lobe pneumonia	2	2.5	—	—
P. A.	35	F	Pleural effusion;? of bronchogenic carcinoma	0	2.5	—	—
C. R.	32	M	? Small pulmonary embolism	5	—	8.5	—
G. J.	22	F	Hyperthyroidism	0	—	0	—
O. R.	94	M	Pulmonary tuberculosis; and ? bronchogenic carcinoma	—	—	0	0
K. E.	38	M	Laennec's cirrhosis	—	0	—	0
G. E.	45	M	Laennec's cirrhosis	—	0	—	0
J. G.	56	M	Laennec's cirrhosis with gouty arthritis	0	—	0	—
H. A.	38	M	Laennec's cirrhosis	0	0	—	—
M. L.	77	M	Laennec's cirrhosis with portocaval anastomosis	0	0	—	—
A. H.*	45	F	Laennec's cirrhosis (liver biopsy revealed fatty liver)	—	—	0	0
W. D.	57	M	Laennec's cirrhosis	—	—	0	0
B. W.	45	M	Laennec's cirrhosis and diabetes mellitus	—	—	0	0
M. L.	55	M	Laennec's cirrhosis (liver biopsy showed normal liver tissue)	—	—	2.5	0
B. J.†	88	M	Chronic cor pulmonale	—	3	—	0
				—	0	3	—

* See table 2.
† The test on this patient was repeated after 1 week.

TABLE 2: Concentration of BSP in Serum

Patient	Age	Sex	Diagnosis	90 min. after BSP adm. <i>Per cent</i>	120 min. after BSP adm. <i>Per cent</i>	150 min. after BSP adm. <i>Per cent</i>	180 min. after BSP adm. <i>Per cent</i>
T. W.	57	M	Laennec's cirrhosis with epilepsy grandmal	3	0	—	—
C. O.	46	M	Laennec's cirrhosis	0	2	—	—
A. H.*	45	F	Laennec's cirrhosis	—	0	2.5	2
H. J.	70	M	Old pulmonary tuberculosis with pneumonia	5	2	—	—
B. A.	55	M	Bilateral cataracts	—	—	0	2
S. E.	73	F	Parkinsonism with neurosyphilis	—	—	2	4

* Same patient.

6 out of 9 patients without liver disease in 45 minutes and in 1 out of 9 patients with Laennec's cirrhosis in 60 minutes. Three out of 3 patients with Laennec's cirrhosis absorbed the BSP from 90 minutes on. It is apparent that the enteric absorption of BSP is delayed in patients with Laennec's cirrhosis and that the dye almost remains unabsorbed for the first-hour period.

In this study the dose of 10 mg. per Kg. of body weight, a similar dose used in a study by Ritter,⁹ was chosen because of the fact that when the BSP

would be absorbed from the gastrointestinal tract it would enter the portal circulation and would be taken up by the Kupffer cells in the liver before the dye would reach the right side of the heart and the systemic circulation. Therefore, if the BSP would have been ingested in the dose of 5 mg. per Kg. of body weight it might not have been detected in the peripheral venous blood even though it is absorbed from the gastrointestinal tract. I believe this is the explanation of the results of the study of Owen⁷ who failed to detect BSP in

the peripheral venous blood in 60 minutes after the intragastric and intraduodenal administration of BSP to 20 humans in the dose of 5 mg. per Kg. of body weight.

These results go together with the report of the study of Lorber and Shay⁸ who demonstrated in humans that the BSP is absorbed rapidly from the intestine. The BSP concentration in the serum was 2 to 3 per cent in 10 of 14 patients, indicating that

function with the dose of 5 mg. per Kg. of body weight.

The study was undertaken with the consultation of Emile C. Nash, M.D., F.A.C.P., Chief Medical Officer, District of Columbia General Hospital, Washington, D. C. I am grateful to him for reviewing the manuscript. Thanks are due to the personnel of the chemistry laboratory of the D. C. General Hospital and to Miss Sandra Lee Medeiros for their technical assistance.

TABLE 3: Concentration of BSP in Urine

Patient	Age	Sex	Diagnosis	Minutes urine was collected after BSP administration							
				15	30	45	60	90	120	150	180
<i>Per cent</i>											
B. J.	68	M	Chronic cor pulmonale	*	0	*	0	—	—	—	—
K. E.	38	M	Laennec's cirrhosis	*	*	*	0	—	—	—	—
G. E.	45	M	Laennec's cirrhosis	*	0	*	0	—	—	—	—
J. G.	56	M	Laennec's cirrhosis with gouty arthritis	0	*	0	—	—	—	—	—
T. W.	57	M	Laennec's cirrhosis with grand mal epilepsy	*	*	*	*	0	0	—	—
C. O.	46	M	Laennec's cirrhosis	*	*	*	*	0	0	—	—
H. J.	70	M	Old tuberculosis of lung with pneumonia	*	*	*	*	0	0	—	—
B. A.	55	M	Bilateral cataracts	*	*	*	*	*	*	0	0
S. E.	73	F	Parkinsonism with neuro- syphilis	*	*	*	*	*	*	0	0
A. H.	45	F	Laennec's cirrhosis	*	*	*	*	*	*	18.5	23

* During this period patient did not void urine.

enteric absorption of BSP is minimal, although no definite conclusion can be drawn since after the dye is absorbed it is in the dynamic state.

Summary and Conclusions

The enteric absorption of bromsulfalein was studied in 24 patients after the dye was administered orally in a dose of 10 mg. per Kg. of body weight. The BSP was absorbed from the gastrointestinal tract and was detected in the serum as early as 15 minutes in some of the patients who did not have liver disease but was not absorbed up to 60 minutes by 8 out of 9 patients who had Laennec's cirrhosis.

Since the serum concentration of BSP is usually 2 to 3 per cent in patients without liver disease and 0 per cent in patients with Laennec's cirrhosis for the first-hour period, it seems that the enterohepatic circulation of BSP does not affect the efficiency of the bromsulfalein test for hepatic

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Anterior Cervical Decompression and Fusion for Cervical Spondylosis

JOHN L. FOX, M.D.*

THE ANTERIOR OPERATIVE APPROACH to the cervical spine for removal of a pathologic intervertebral disc or stabilization of a fracture site has gained considerable popularity in recent years. Anterior cervical decompression and fusion for relief of symptoms of cervical spondylosis is considered by many neurologic and orthopedic surgeons to be the operative procedure of choice.¹⁻⁴ The purpose of this presentation will be to support this conclusion by a follow-up study of patients operated on with this technique by the author.

The cervical spondylosis syndrome has been well described in the literature.⁵⁻¹¹ It is essentially a form of degenerative or hypertrophic osteoarthritis which results in intervertebral disc degeneration and a buildup of calcific and fibrous deposits in the annulus fibrosus and anterior and posterior longitudinal ligaments. Usually the process is asymptomatic. If symptomatic, the initial complaints often are pain referred from the site of ligament irritation. An aching, burning, or sharp pain may be referred to the neck, interscapular region, shoulder, or occiput with headaches.

Involvement of nerve roots forming the brachial plexus may cause pain, paresthesias, and numbness in the arm. Sensory loss, weakness, and hypoaffective deep tendon reflexes will follow in the pattern defined by the nerve root involved. Direct nerve-root pressure or interference with its blood supply gives rise to these symptoms. The diagnosis is usually corroborated by X-ray films of the cervical spine with oblique views (figure 1). Cervical discography has been recommended by some,^{1, 2, 3} but others have found it misleading.¹² Myelography with subarachnoid Pantopaque® (figure 2) presently is the usual method of radiographic confirmation of the site of the lesion.

An often insidious and misdiagnosed form of this disease is myelopathy secondary to cervical spondylosis. This results from direct cord pressure

or, more often, interference with the radicular or anterior spinal artery supply to the cord. A patient complaining of stiff, aching limbs often is told he has "arthritis" and is given aspirin while the quadriparesis, spasticity and bladder dysfunction progress. This patient often has an associated congenitally narrow cervical spinal canal.^{7, 11}

Finally, the osteoarthritic deposits may actually encroach upon the vertebral artery. This may give rise to signs of vertebrobasilar insufficiency requiring surgical decompression.^{13, 14}

Clinical Study

I have carried out anterior cervical decompression and fusion by the Cloward method³ on 40 patients in the past 3 years. This includes 37 cases of cervical spondylosis not relieved by conservative measures and 3 cases of cervical fracture. The symptoms of cervical spondylosis included neck pain (23 cases), arm pain (30 cases), segmental hypesthesia in arm (22 cases), segmental paresis in an arm (27 cases), segmental depressed deep-tendon reflexes in an arm (15 cases), paresis and spasticity in the legs (3 cases), hypesthesia of the trunk and legs (3 cases), and hyperactive deep-tendon reflexes in the legs (4 cases).

Of these, 28 cases of cervical spondylosis have been followed long enough to assess late clinical and radiographic fusion results. Clinically all but 2 had relief of neck and arm pain. The 2 patients without relief had excellent 3-level fusions as shown on X-ray films over 1 year later. One patient remained quadriparetic without progression following cervical laminectomy for spondylosis and later anterior cervical fusion. In 5 patients the neck and arm pain was relieved but segmental arm weakness persisted. In most patients pre-existing weakness and sensory deficit improved.

The surgical procedure consists of exposure of the prevertebral space between the carotid sheath and tracheo-esophageal structures. The pathologic disc and hypertrophic spurs and ridges are removed with the Cloward drill, and the hole is bridged by a dowel of bone taken from the iliac crest. Resulting complications in the 37 cases of

* Chief of Neurosurgical Service, Veterans Administration Hospital, 50 Irving Street, N.W., Washington, D. C. 20422; Assistant Clinical Professor in Neurosurgery, George Washington University and Georgetown University Schools of Medicine.

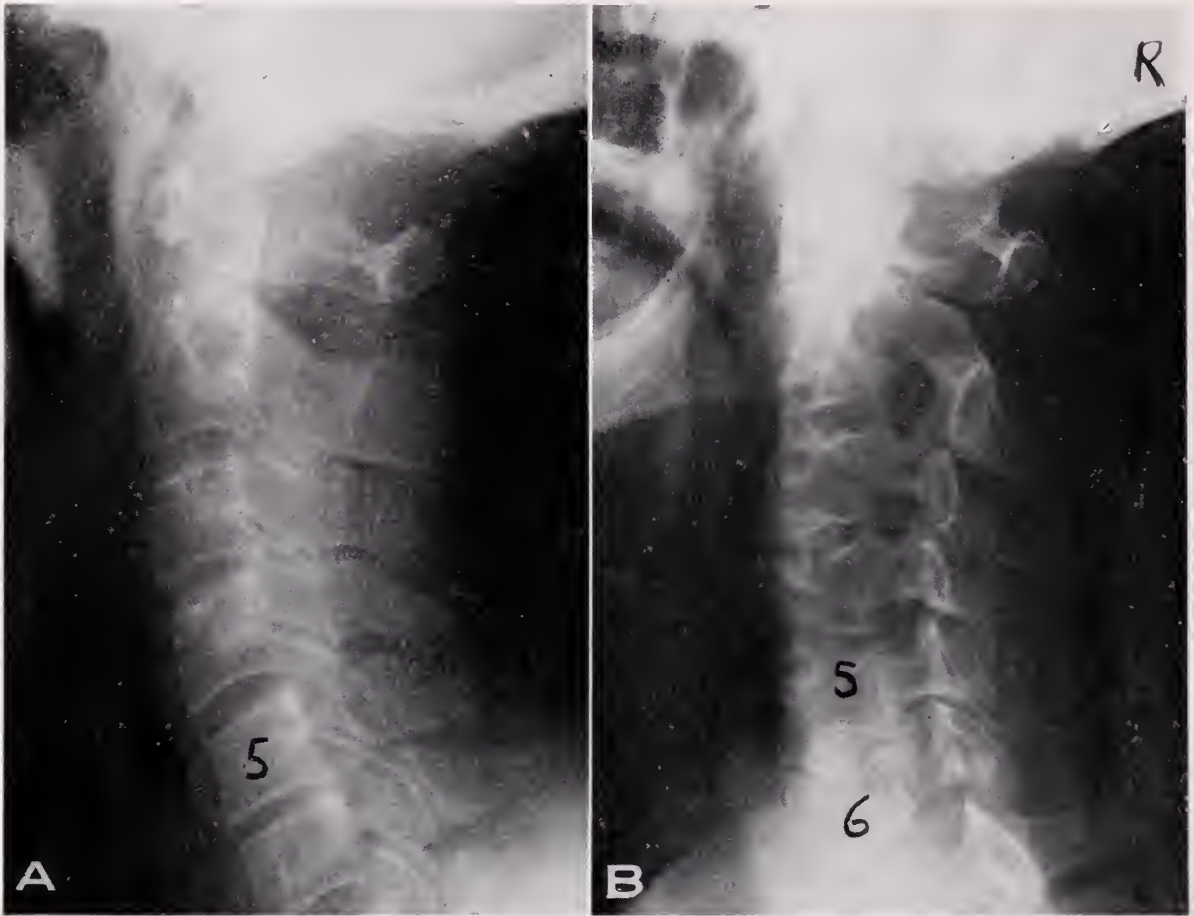


FIG. 1. A. Lateral cervical spine X-ray film showing some narrowing of the C-5,6 disc space. B. Oblique view. Note marked encroachment of a spondylotic ridge into the C-5,6 intervertebral foramen through which pass the C-6 nerve root and radicular artery.

cervical spondylosis have included hoarseness lasting a few months (1), retropharyngeal hematoma successfully drained (2), vertebral-artery transection and ligation without neurologic deficit (2), iliac wound infection which resolved (1), focal aseptic necrosis of the iliac bone successfully treated by excision (1), fusion of the cervical spine in 20-degree forward angulation without symptoms (2), and postoperative death from epidural hematoma (1).

Of interest is the radiographic evidence of fusion in 30 cases (including 2 fractures) of anterior cervical decompression and fusion with sufficient follow-up. Table 1 lists the disc levels operated on. A typical example of intervertebral fusion is demonstrated in figure 3. The latest follow-up X-ray films were obtained at the following periods postoperatively: 3-6 months (6 cases), 7-12 months (10 cases), and over 1 year (14 cases). In every case very good fusion was evident on the X-ray films. Two patients had a fusion in 20-degree forward angulation. One was a patient with previous

TABLE 1: Intervertebral Fusion Levels in 30 Operated Cases

Disc Level	Single Fusions	Double Fusions	Triple Fusions	Total Discs
C-4, 5	4	3	1	8
C-5, 6	7	13	2	22
C-6, 7	4	10	2	16
C-7, T-1	—	—	1	1
TOTAL DISCS	15	26	6	47

laminectomy and had a 2-level fusion. The other patient had only a single-level fusion. No protection other than 2 months with a Thomas collar is used postoperatively, and the patients are immediately ambulated.

Discussion

The surgical treatment of cervical spondylosis had been restricted to laminectomy for posterior decompression to allow the spinal cord to move back away from the spondylotic ridge over the



FIG. 2. Translateral radiographic view of cervical spine during myelography with subarachnoid Pantopaque. Note encroachment into the column of Pantopaque by a spondylotic ridge at the C-4, 5 interspace in another patient.

disc. Modifications have included opening the dura to section the dentate ligaments,¹⁵ leaving the dura open and inserting a dural graft,¹⁰ or carrying out extensive laminectomy and facetectomy to unroof the intervertebral foramina.¹⁶ In order to remove the pathology from the patient rather than the spinal cord from the pathology, Robinson and Smith¹ initiated the anterior approach to cervical disc excision, and Cloward³ popularized his unique technique of anterior cervical decompression and fusion.

My experience with the latter method has supported its value not only in the treatment of cervical spondylosis but also for anterior decompression and fusion in certain cases of fractured cervical spine. The anterior operative approach nearly always affords good relief of pain and will arrest any deteriorating neurologic deficit. Usually strength and sensation improve, but the patient must be forewarned that the surgery may only prevent further neural damage without effect-

ing improvement in strength and sensation. Immobilization of the patient is not required to obtain a good fusion result. The Thomas collar is comfortable and serves only to restrict excess movement of the neck for 2 months.



FIG. 3. Translateral radiographic view of cervical spine in another patient. Note evidence of excellent intervertebral fusion at C-4, 5 and at C-5, 6 7 months after anterior cervical decompression and fusion procedure.

Summary

The etiology and symptoms of cervical spondylosis have been reviewed. Twenty-eight cases have been evaluated clinically and radiologically after sufficient time following anterior cervical decompression and fusion. These are taken from a 3-year series of 40 patients operated on by this method for cervical spondylosis and fracture (3 cases). In all instances good bony fusion resulted. In all but 2 cases pain was relieved. Preexisting neurologic deficits remained either stationary or improved. The operation is considered to be the surgical procedure of choice for symptomatic cervical spondylosis not responding to the usual conservative measures.

(Continued on page 196)

Hyperglycemia Associated with Diphenylhydantoin (Dilantin) Intoxication

DHIA M. SAID, M.D.,* JUAN R. FRAGA, M.D.,† AND THOMAS E. REICHELDERFER, M.D.‡

HYPERGLYCEMIA and glycosuria simulating diabetes mellitus associated with high doses of diphenylhydantoin has been reported only once.

Diphenylhydantoin (Dilantin®) is a drug which has been used in the treatment of convulsive disorders since its introduction in 1938.¹ It is a relatively safe drug but is not free from side-effects. Many of these are mild and can be managed by reducing the dosage or discontinuing the drug for a short period. On the other hand, there are some toxic effects which are serious and even fatal. Disturbance of equilibrium, ataxia, unsteadiness of gait, and diplopia are the most common among the toxic effects on the central nervous system.^{2, 3} Other side-effects include nervousness, tremors, nystagmus, drowsiness, dysarthria, headache, dizziness, blurring of vision, ocular pain, insomnia, delusions, vertigo, and hallucinations. Gastrointestinal manifestations which are attributed to Dilantin include anorexia, nausea, vomiting, epigastric pain, constipation, and hematemesis. Asymptomatic transient albuminuria and hematuria have been reported. Transient leukopenia, severe granulocytopenia, eosinophilia, and thrombocytopenia are manifestations of toxicity on the hemopoietic system.⁴ Morbilliform, scarlatiniform and urticarial rashes, alopecia and polyarthropathy are rare side-effects. Exfoliative dermatitis, lupus erythematosus, periarteritis nodosa, and erythema multiforme exudativum have been attributed to Dilantin intoxication.^{5, 6, 7} Hyperplasia of the gums occurs in about 20 per cent of patients receiving Dilantin and may be followed by edema, bleeding on pressure, and gingivitis.² Other rare side-effects include pulmonary changes detectable radiologically, such as accentuation of the bronchovascular markings or diffuse pul-

monary fibrosis which appears to have an inverse relation with gingival hyperplasia.⁸ A syndrome which resembles malignant lymphomas, both clinically and pathologically, which is manifested by fever, lymphadenopathy, eosinophilia, exanthema, and hepatosplenomegaly has also been described.⁹

Hyperglycemia, glycosuria and drowsiness as a manifestation of Dilantin toxicity was apparently reported first in 1966 in a case of diphenylhydantoin overdosage in an unresponsive patient and was thought to be a case of diabetic coma.¹⁰

Since this drug is so widely used, recognition of this complication should stimulate further study to determine the mode of action of this drug in causing hyperglycemia.

Report of Case

A 26-month-old male Negro was admitted because of high blood sugar, glycosuria and drowsiness with the provisional diagnosis of diabetes mellitus. The child was receiving Dilantin and phenobarbital for the control of grand mal seizures which started at the age of 6 months. He was on 30 mg. t.i.d. of phenobarbital and 50 mg. of Dilantin t.i.d. which was increased to 100 mg. t.i.d. 2 weeks before admission. He was kept on this high dose for 1 week. He weighed 6 lbs., 3 ozs. and was the product of a full-term, uncomplicated pregnancy with a satisfactory condition at birth. His neonatal and immediate postnatal periods were unremarkable. The seizures were attributed to cortical atrophy.

The family history is noncontributory except for the paternal grandfather, who has diabetes mellitus.

The child had a cold a week before admission and was treated with penicillin. The day of admission he was drowsy and urinalysis revealed 4+ sugar as determined by a Clinitest® tablet. The blood sugar was 172 mg. per 100 ml.

Physical examination revealed an unresponsive, poorly developed, mentally retarded, small child. His weight was 18 lbs., 4 ozs. The temperature was 102° F, the pulse rate 104 per minute, the respiratory rate 32 per minute, and the blood pressure 105/65. There was no odor of acetone to the breath or any respiratory

* Chief Resident, Department of Pediatrics, District of Columbia General Hospital.

† Medical Officer, Department of Pediatrics, District of Columbia General Hospital.

‡ Chief Medical Officer, Department of Pediatrics, District of Columbia General Hospital, Washington, D.C. 20003.

difficulty. The pupils were equal and reactive to light. The throat was hyperemic, the lungs were clear, and the heart sounds were normal without murmurs. The abdomen was soft and no organomegaly was present. There was deformity of both feet with talipes equinovarus. The deep tendon reflexes were normal and equal on both sides. Funduscopic examination was normal.

Laboratory investigations revealed: white blood cells 8,400 per cu.mm. with 68 per cent neutrophils, 28 per cent lymphocytes, and 4 per cent eosinophils; hematocrit 26 per cent; sickle-cell preparation negative. Urinalysis showed 3+ sugar, a trace of albumin, and a pH of 6. There was no acetone in the urine. The blood sugar was 384 mg. per 100 ml. The blood electrolytes were Na 126, K 3.6, Cl 97, CO₂ 22 mEq./L, and urea nitrogen 14 mg. per cent. The spinal fluid was negative except for a sugar of 162 mg. per cent. Blood acetone was negative. Dilantin serum level measured 36 hours after the last dose was 2.2 mg. per 100 ml. Phenobarbital level was 16 mg. per 100 ml. as barbituric acid.

The child was given intravenous fluid therapy. Ten units of regular insulin was given I.V. and 10 units I.M. The blood sugar estimation was repeated every 3 hours. It dropped to 10 mg. per 100 ml. a few hours after insulin administration. Hypertonic glucose in 50 per cent solution was given. Repeated urine examinations showed no acetone. A few hours after admission the urine was negative for sugar. Thereafter the blood sugar remained within normal limits. A glucose tolerance test ruled out diabetes mellitus. Blood sugar values were 67, 113, 118, 86, 99 and 43 mg. per 100 ml. at 0, ½, 1, 2, 3, and 4 hours (figure 1).

The child recovered from his drowsy ill-effects and was discharged on the fifth hospital day.

Discussion

Hyperglycemia with glycosuria in a comatose or semicomatose patient is strongly suggestive of diabetic coma. However, the absence of acetonemia and acetonuria in such a patient should cast great doubt on this diagnosis. Diabetic coma in children is usually associated with a large amount of acetone in the urine and a considerable increase in acetone level in the blood, hence the name diabetic acidosis. The history of polyuria and polydipsia is also suggestive of the diagnosis of diabetes mellitus.

When hyperglycemia and glycosuria are encountered without acetonuria and acetonemia, as in the case reported here, diabetic acidosis is not present and one should look for other causes of hyperglycemia. Apart from diabetes mellitus there are many conditions which could cause an elevation of the blood sugar and ultimately glycosuria. Among these are gigantism or acromegaly, hyperthyroidism, pheochromocytoma, Cushing's syndrome, and vascular disease.¹¹ In acromegaly and

gigantism hyperglycemia is due to increased secretion of the growth hormone which causes decreased carbohydrate tolerance. In Cushing's syndrome there is an abnormally high rate of secretion of cortisol which causes changes in carbohydrate and protein metabolism resulting in an increase in liver glycogen, acceleration of gluconeogenesis, and a tendency to high blood sugar. In pheochromocytoma there is increased adrenalin concentration in the blood which suppresses insulin production and results in an increase in blood sugar. Patients with vascular diseases show a high incidence of hyperglycemia and diabetes.¹⁰

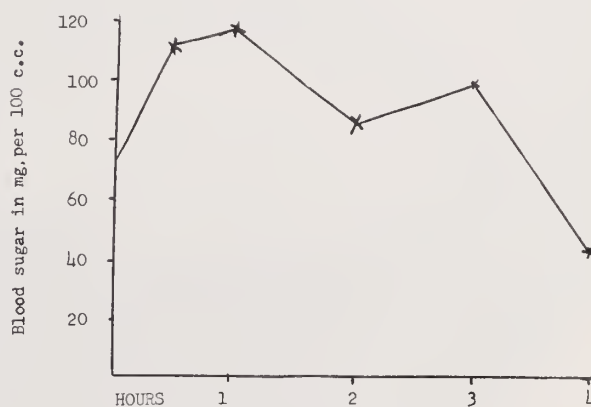


FIG. 1. Glucose tolerance test.

It is also reported in cases of burns¹² and in patients convalescing from burns.¹³ Hyperglycemia occurring as a complication of burns may be of an early transient type which begins within an hour or so after the burn and lasts for a few hours up to 1 or 2 days and is attributed to an increase in the adrenalin level of the blood, although adrenocorticosteroids may influence this too. It may begin a week or 2 after an extensive burn and last days and even weeks. This is due to pseudodiabetes of burns, or burnstress diabetes which is accompanied by glycosuria, polysuria, dehydration, azotemia, coma, and absence of ketone bodies.¹² Patients convalescing from burn also may develop severe hyperglycemia, glycosuria, dehydration and coma, and this is due to the failure of insulinogenic reserve of the pancreas following a prolonged feeding of diets high in carbohydrate.¹³ Hyperglycemia has been described in postoperative and hypothermia patients who are unable to metabolize glucose at a normal rate after isotonic glucose infusion.¹⁴ Apart from the conditions mentioned above there are many drugs and chemical preparations which could cause an increase in blood sugar level. Antihypertensive

drugs such as hydrochlorothiazide and diazoxide have been reported to induce hyperglycemia and glycosuria by a direct inhibitory action on the islet cells of Langerhans.^{15, 16} Hydralazine and guanethidine have a slight and delayed effect in raising the blood sugar.¹⁵ Corticosteroids may induce hyperglycemia and glycosuria and acetonuria.¹⁷ Overdosage of nalidixic acid was reported to have caused convulsion, vomiting, hyperglycemia and glycosuria with no acetone in the urine.¹⁸ From this large list of conditions and chemicals which could produce hyperglycemia and glycosuria it is necessary to obtain a careful history to rule out any possibility of drug effect. A thorough questioning as to the presence or absence of polyuria and polydipsia is also required.

In treating convulsive disorders a desirable therapeutic level of Dilantin in the plasma of 10 mg. per liter (1 mg. per cent) is suggested. This is achieved usually with a dosage of 5 to 6 mg. of diphenylhydantoin per Kg. of body weight per day. Toxicity begins at a serum level of 2 mg. per 100 ml.¹⁹ It was shown that in some patients toxic side-effects result from a relatively lower concentration. This intolerance to a relatively low or a usual dose of diphenylhydantoin is due to insufficient parahydroxylation of the drug in the liver. There is an enzymatic reaction which occurs in the liver leading to parahydroxylation of one of the phenol groups in the molecule. The product of this parahydroxylation, 5-phenyl-5-parahydroxyphenyl-hydantoin (HPPH), is coupled mainly with glucuronic acid and finally eliminated through the kidney. Defects in this parahydroxylation have shown a familial incidence. This leads to accumulation and high concentration of Dilantin in the blood, resulting in toxic manifestations from a usual dose, which under normal circumstances have caused no harm.²⁰

In the case reported here the child was taking 100 mg. of diphenylhydantoin t.i.d. (33 mg. per Kg. per day), which was 5 times higher than the usual dose. This high dosage was continued for 1 week. A few days later the child developed drowsiness, hyperglycemia and glycosuria and was thought to have diabetes mellitus. However, there was no history of polyuria or polydipsia. Urine and blood were negative for acetone. This should have led the staff to disregard the possibility of diabetes mellitus and look for some other cause for the hyperglycemia. Since there was no medication which could have possibly induced hyperglycemia, diphenylhydantoin was suspected to be the cause. The serum Dilantin levels were measured and found to be 2.2 mg. per cent. This meas-

urement was done 36 hours after the last dose. Therefore the actual serum Dilantin level must have been higher when the patient entered the hospital. It has been shown that there is a decrease of 5 per cent of the serum Dilantin level 6 hours after a dose of Dilantin and a decrease of 25 to 30 per cent 24 hours after an oral dose of Dilantin.²⁰ Central toxicity of Dilantin begins at a serum level of 20 mg. per liter (2 mg./ml.), although some other investigators reported that there may be side-effects in some patients at a serum level of 1.5 mg. per cent.²¹ Others have shown that in some patients even a small dose of Dilantin may cause a significant rise in the serum level of Dilantin far beyond the toxic level, causing toxic manifestations.²⁰

From our review of the literature this would appear to be the second reported case of this condition. The first case was reported in a 20-month-old child who had an accidental ingestion of a large amount of diphenylhydantoin. He became semicomatose and was found to have high blood sugar and glycosuria. It was thought that the child might have diabetes mellitus, and insulin was given. A glucose tolerance test was negative.¹⁰ This diagnosis was later disregarded.

Experimental studies in rabbits showed a higher blood glucose level among those rabbits who received diphenylhydantoin and who were given electroshocks to produce convulsion than among those who were given electroshocks without diphenylhydantoin. The elevated blood sugar in the rabbits premedicated with diphenylhydantoin suggested that this drug may have caused elevation of their blood sugar. Prior to the report of the first case no association between hyperglycemia and diphenylhydantoin was reported in man. The mode of action of diphenylhydantoin is not known. Whether it increases the blood sugar by stimulating the adrenal cortex, or by stimulating the adrenal medulla, or by inhibiting the islets of Langerhans, or by affecting the metabolism of carbohydrate in the liver is yet to be determined. The important point is that one should not confuse this condition with diabetes.

Summary

A case of hyperglycemia and glycosuria in a mentally retarded child who was given an overdosage of diphenylhydantoin has been presented. This was thought to be a case of diabetes mellitus but careful history, physical examination and laboratory studies ruled this out. It has been emphasized that there are many drugs and

(Continued on page 196)



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tancy may occur in elderly males with prostatic hypertrophy, this should be watched for in such patients until they have gained some experience with the drug. Although never reported, theoretically a curare-like action may occur with possible loss of voluntary muscle control. Such patients should receive prompt and continuing artificial respiration until the drug effect has been exhausted.

Side Effects: The more common side effects, in order of incidence, are xerostomia, mydriasis, hesitancy of urination and gastric fullness.

Dosage: The maximal tolerated dosage is usually the most effective. For most *adult* patients this will be four to six 15-mg. tablets daily in divided doses. In severe conditions as many as two tablets four to six times daily may be required. Pro-Banthine (brand of propantheline bromide) is supplied as tablets of 15 mg., as prolonged-acting tablets of 30 mg. and, for parenteral use, as serum-type vials of 30 mg. The parenteral dose should be adjusted to the patient's requirement and may be up to 30 mg. or more every six hours, intramuscularly or intravenously.

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SEARLE

Research in the Service of Medicine



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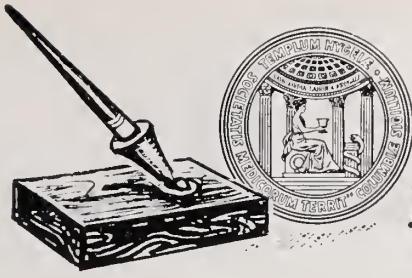
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President's Page

INVOLVEMENT IN CIVIC PROBLEMS URGENT



THE MEDICAL PROFESSION comprises one of the largest groups of highly trained men and women in America. We doctors work long, tiring hours for the health of the Nation as a whole and to save the lives of countless individuals. Yet the years of hospital training and the nature of our patient-physician relationship have made us a clique of do-it-yourself, go-it-alone independents. Few of us take an active part in civic affairs, church activities, politics or other nonmedical functions. Our excuse—too busy—is readily accepted, but we have walled ourselves out and our medical knowledge in to such a degree that we are rarely consulted for any but the most highly professional civic problems.

However, as the medieval restriction of medical knowledge to the Latin language of the monasteries came to an end during the enlightened period of the Renaissance, so now in modern times public knowledge of medical and allied healing arts has reached hitherto undreamed-of proportions. In the face of frequently reiterated questions from patients, politicians, and the public at large, we can no longer remain aloof. We must face the national problems of medical care ourselves or solutions often not palatable to us will be provided by government intervention. New laws are being passed even now to give greater powers to paramedical practitioners in an effort to provide personnel for adequate health care for all levels of the population. We have become followers, not leaders, in our chosen field, accepting as inevitable changes which we could have prevented and can still prevent by greater interest in the public welfare.

We, as physicians, must take a more active part in the nonmedical world around us in order that we can present the viewpoint of the medical profession in the community as well as medical affairs. It is time for us to resume the leadership in health legislation in order to fill the vacuum which we ourselves have created. We must speak or forever hold our peace.

William S. McEune



Physician Responsibilities under Medicare in Regard to Extended Care Facilities

OVER 50 PER CENT of the patients admitted to Montgomery County and Prince George's County Extended Care Facilities are from District of Columbia hospitals and had as their private physicians D. C. doctors. Because of distance, many of these physicians request that their patients' care be assumed by the staff physician.

This has created many problems, but the most significant has been the relative lack of suitable medical information accompanying the patients. This has created medical and nursing care problems along with certification of eligibility for Extended Care Facility Benefits.

On behalf of members of the Maryland Association of Nursing Home Physicians I should like to call attention to the responsibilities of physicians as defined in the Medicare Law when their patients are transferred to Extended Care Facilities. These are as follows:

1. Each patient must have at the time of admission or prior to admission information containing current medical findings, diagnoses, rehabilitation potential, a summary of the course of treatment followed in the hospital, and orders for the immediate care of the patient.

2. A physical examination must be made within 48 hours of admission and recorded on the chart unless such an examination was performed within 5 days prior to admission and a copy of it is on the chart. Based on this evaluation the physician must prescribe a planned regimen of medical care which covers indicated services, diet, special procedures recommended for the health and safety of the patient, and plans for continuing care and discharge.

3. The physician must see the patient at least every 30 days and record a progress note.

Physicians should abide by these regulations in the interest of insuring good patient care and to prevent any potential medicolegal problems which may arise through the treatment of patients without having adequate medical information. Furthermore, failure to comply with the regulations may deny patients their Extended Care Facility Benefits, and the Extended Care Facilities may lose their certification.

RAYMOND T. BENACK, M.D.
*President, Maryland Association
of Nursing Home Physicians*

The Unchanging Lessons

A FEW YEARS AGO an educator addressing the graduating class of a large eastern university stated: "Gentlemen, during the 4 years you have been here we have taught you many things; over the next 10 years about half of what you have learned will be shown to be false. The only difficulty is that at this time we don't know which half."

This is an ever-present disillusionment in the profession of teaching, and teaching medicine is no exception. Many of the things we learned in medical school had to be unlearned later in practice. Those of us who have taught medical students, even at a minimal level, might reflect with chagrin on some of the gospels we pro-

claimed a few years ago that had to be abandoned. With what great sorrow did we fold up the fever machine, and with what nostalgia did we learn that "fats no longer burn in the flame of carbohydrates." Yet there are in the half which remain many lessons that can never change.

It is my purpose in this brief article to present two lessons well taught by a great teacher of medicine—lessons that shall never bow to the changing times nor to the increase of knowledge.

When this professor of medicine met the junior medical students of my class at a teaching hospital to assign them to patients on the wards, he made a memorable statement which I recall (with license) as: "Gentlemen, you are going on the

Opinions expressed in contributions to the Editorial Section are those of the writers and do not necessarily reflect the views of the Medical Society of the District of Columbia

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On the use of hallucinogenics, stimulants and depressant drugs contact the Bureau of Drug Abuse Control of the Food and Drug Administration. There is a Washington Headquarters Office (telephone 557-2387) open from 9:00 a.m. to 6:00 p.m. weekdays. In case of an emergency at any other time, call 962-2341 and ask for the Bureau of Drug Abuse Control Duty Officer.

For questions on legal, enforcement and treatment problems concerning drugs, call the Narcotics Section of the Metropolitan Police Department of the District of Columbia (626-2493) from 8:00 a.m. to 4:00 p.m., Monday through Friday. At all other times call 626-2206 and ask to be connected with a Narcotics Officer.

wards to see patients, and this will be a new experience for you. The first thing you must know is that you will be working with human beings. They are sick people; often they may react differently than people who are not sick. They may resent you and the questions you ask of them. Some may well deceive you, may give you answers that are not true. Some may aggravate you even to the point where you might lose your temper. But keep your composure, make allowance for patients—they are in some way sick or they wouldn't be here."

The second lesson flowed naturally from the first. If we realize that patients are human beings and in the philosophic sense that they are per-

sonalities, we must extend to them all the respect and dignity due to the greatest of God's creatures, man. In his clinic one did not present a case by stating: "This 21-year-old diabetic" or "this middle-aged arthritic"; it had to be "this 21-year-old person who has diabetes." This might seem to be a matter of semantics, and an insignificant one, but it makes a great difference to the patient who is the recipient of the presentation.

These two lessons, while simple in pronouncement, are truly great in content. It is a constant challenge to those of us who practice medicine in the work-a-day world to translate them into our everyday habitude.

RAYMOND A. OSBOURN, M.D.

Part B Increase Is Caused by Numerous Factors*

THE RECENTLY ANNOUNCED INCREASE in the Medicare Part B premium from \$3 to \$4 per month is not primarily due to a rise in physician fees, and the public must be made to understand this. Despite the widely publicized 7 per cent rise in physicians' charges in the past year, only 25 per cent of the \$1 premium increase—by HEW's own admission—is attributable to projected fee increases for the period ahead.

Projected increases in utilization of covered services (estimated at 2 per cent a year), resulting in earlier satisfaction of the \$50 deductible, will account for another one-fourth of the increase.

Approximately 20 per cent of the \$1 increase is needed to finance the program at its past level of operation.

Because of so-called fee abuses, one senior citizens' group has urged the substitution of fixed-

dollar fee schedules for the current Part B fee formula based upon reasonable charges.

Considering the original intent of Medicare and Medicaid to ensure doctor participation by devising equitable reimbursement formulas, it is ironic and short-sighted to dwell on this 7 per cent increase in physicians' charges as the primary reason for Part B premium adjustments.

The current reimbursement formulas for both Medicare and Medicaid patient services were designed to rectify outmoded and unrealistic fee schedules for both welfare recipients and older persons. Now that these long-standing inequities have been corrected to a large degree, let's not include as physician abuses those long overdue fee increments authorized under government programs.

Those who now advocate a regression to fee schedules for the elderly and the indigent are voicing a plea for a return to the "charity patient" concept.

* Reprinted by permission from *The Blue Shield*, January 1968.



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Live Mumps Vaccine

Recommendations of the Public Health Service Advisory Committee on Immunization Practices

MUMPS, one of the common communicable diseases, is observed with greatest frequency in young school-age children. However, approximately 15 per cent of reported cases occur after the onset of puberty. Overt evidence of central nervous system disease with sequelae is rare, although meningeal involvement appears to be common. Orchitis has been reported in up to 20 per cent of the clinical mumps cases occurring in postpubertal males. Symptomatic involvement of other glands and organs is observed less frequently.

All naturally acquired mumps infections, including the estimated 30 per cent which are sub-clinical, confer durable immunity.

Live mumps vaccine is prepared in chick embryo cell culture. It produces an inapparent, noncommunicable infection following administration. Febrile reactions and mumps-like symptoms have not been associated with the vaccine.

More than 95 per cent of susceptible vaccinees develop detectable antibodies after vaccination, although titers are lower than those induced by natural infection. The pattern of antibody persistence parallels that seen following clinical mumps although at a lower level. The long-term duration of antibody is unknown at the present time; individuals have been observed for only 2 years following vaccination because the vaccine is a recent development.

Excellent protection against naturally occurring mumps has been documented in vaccinees for the first year after vaccination. Limited data on natural exposure during the second year indicate continuing protection.

Recommendations for Vaccine Use

Live mumps vaccine may be considered for use in children approaching puberty, in adolescents, and in adults, especially males, if they have not had mumps. The vaccine is not specifically contraindicated for younger children, but until more information on the duration of immunity is available, the vaccine is not recommended for routine use. Furthermore, mumps immunization should not be allowed to compromise the effectiveness of public health programs of already established importance.

Age: Live mumps vaccine should not be administered to children less than 12 months of age

because of the possible persistence of interfering maternal antibody.

High risk groups: Epidemic mumps can be particularly disruptive to normal routine in large groups of susceptible individuals. Children living in institutions, for example, might benefit from vaccination against the disease.

Prevention of natural mumps following exposure: Adults and adolescents who are susceptible to mumps by clinical history present a perplexing medical problem when exposed to mumps. It is not now known if live mumps vaccine will provide protection when administered after exposure. There is, however, no contraindication to its use at that time.

Precautions in Using Live Mumps Vaccine

Severe febrile illnesses: Vaccination should be postponed until the patient is completely recovered.

Marked hypersensitivity to vaccine components: Mumps vaccine is produced in chick embryo cell culture and should not be given to persons hypersensitive to ingested egg proteins. Also, the vaccine contains small amounts of neomycin, so it should not be given to individuals known to be sensitive to this antibiotic.

Leukemia, lymphomas, and other generalized malignancies: Theoretically, attenuated mumps virus infection might be potentiated by other severe underlying diseases, such as lymphomas and generalized malignancies.

Altered resistance from therapy: Steroids, alkylating drugs, antimetabolites, and radiation may predispose to untoward complications due to altered resistance.

Pregnancy: Mumps virus infection is not known to exert any untoward effects on the developing fetus. It is reasonable on theoretical grounds, however, to avoid using the live mumps vaccine during pregnancy.

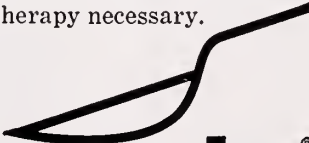
Simultaneous administration with other antigens. In order to evaluate the live mumps vaccine adequately, its simultaneous administration with other vaccines should be deferred until results of controlled clinical investigations are available. Until then, it is recommended that mumps vaccination be separated from the other immunization procedures by about 1 month whenever possible.



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► PAMPHLETS

HEW Publications

(Available from the Superintendent of Documents, U. S. Government Printing Office, Washington, D. C. 20402. Single copies of most of these are available free upon request from the Public Health Service, Washington, D. C. 20201.)

Facts About Nutrition (PHS Publ. No. 917, revised 1967). Prepared by the National Institute of Arthritis and Metabolic Diseases, the booklet defines the nature of food elements which are essential for a well-balanced diet from infancy through old age as well as background information on nutritional problems of obesity, old age, pregnancy, and infancy. Price, 25 cents.

If You Have Emphysema or Chronic Bronchitis (PHS Publ. No. 1726). This booklet is designed to help patients understand what causes their discomfort and how to minimize it. It discusses the effects of climate, altitude, cigarette smoking, and air pollution and outlines steps physicians take in treating the diseases. Price, 15 cents.

Progress Against Cancer, 1967 (PHS Publ. No. 1720). The second public report of the National Advisory Cancer Council, it deals with research on viruses as cancer-causing agents in laboratory animals and the efforts being made to identify viruses that may give rise to malignant diseases in man. 65 pp. Price, 65 cents.

What We Know About Children and Smoking (PHS Publ. No. 1711). Discusses the prevalence of smoking among children and the factors which influence the child to begin smoking. (Single copies available upon request to National Clearinghouse for Smoking and Health, 4040 North Fairfax Drive, Arlington, Va. 22203.) Price, 5 cents, or \$3.25 per 100.

Wheelchair Prescription (PHS Publ. No. 1666). The first of a Rehabilitation Guide Series, it will aid the physician and other health professionals in selecting and prescribing wheelchairs for patients. (Single copies available upon request to Rehabilitation Medicine Branch, 7915 Eastern Avenue, Silver Spring, Md. 20910.) 26 pp. Price, 20 cents.

Working with Older People: A Guide to Practice. Volume 1: The Practitioner and the Elderly (PHS Publ. No. 1459, Vol. 1). Designed to help all health practitioners engaged in the care of the aged understand the elderly person and the accompanying physical, mental, and social changes that come with age. (Single copies available upon request to Division of Chronic Diseases, PHS, 4040 North Fairfax Drive, Arlington, Va. 22203.) 52 pp. Price, 40 cents.

Changing Philosophy of Medical Jurisprudence*

EDWIN J. HOLMAN, LL.B.†

HISTORICALLY, what we call the practice of medicine has been regulated by law only for a short time. Even now much of the practice of medicine is self-regulated. Medical practice acts were drafted at the demand of the people to establish a minimum standard of competence for those who would hold themselves out as healers. Medical practice acts in this country are a product of the last 3 generations or less. They were enacted to provide for medical practice and then left largely alone.

These acts are microscopic. They relate to a defined practice by a defined group. The group has remained substantially the same. The practice defined originally is probably not the same. Medicine and the practice of medicine, as we understand the terms, have grown and developed tremendously since the several medical practice acts were adopted. Medicine has become complex and complicated.

No matter how much we'd like to return to the good old days we could not nor would not return to that system of medicine practiced when medical practice acts were adopted.

Dr. John McCreary, of Canada, summed up this change when he said last year:

"Those of my age group have seen the popular picture of the physician change drastically from the kindly, well meaning little man whose services were rather ineffectual but who could never consider doing harm to a patient, to the powerful, effective distributor of medical miracles."

I would add—and even now we have just seen the beginning of this drastic and dramatic change. The doctor continued:

"It used to be traditional that the graduating medical student was just about the most self-assured person to be found anywhere. He didn't just think he knew everything; he knew he did and, in the main, he was right. One can find scant evidence of that 'cockiness' in a graduating medical student today. Instead one finds him worrying

about the responsibilities of the future, evaluating his abilities to cope with the problems of his patients."

Dr. McCreary says that a "great deal—perhaps the majority—of the work" which he did as he started his practice could now be done as well or better by others in the health field. Law is not static. Medicine is not static. Change is inevitable in both. The law does and will continue to reflect changes in the field of medicine or, as I think is more correct, in the field of healing arts. Whether Dr. McCreary is correct or not is entirely beside the point. The fact is that the changes in the field of healing arts are reflected in healing arts jurisprudence.

When medical practice acts were adopted medicine and the healing arts were synonymous. The physician alone had to know and be able to do all that could then be done for his patient. In this country, in our lifetimes, almost in this generation this has changed. The physician is no longer the compounder of medicines given his patient; he is no longer the minister of the orders he prescribes. The physician-patient relation is no longer an exclusive one-to-one relation. The physician is the leader of a health team. Evidence of this is conclusively found in the fact of specialization within medicine itself and the proliferation of health professions or services outside medicine. Evidence is found in the operating rooms in both esoteric or usual surgery, as well as in the physician's office filled with diagnostic tools, unavailable when most of you started your practices. Evidence is found in the list of individuals or facilities to whom the physician refers his patient for special care or treatment. Evidence is found in the organization and development of hospital facilities. Evidence is found in the fact that we now have occupations not known or in existence as defined and accepted occupations when medical practice acts were adopted. We have dietitians, technicians, clinical assistants. We have licensed cultists and licensed limited practitioners. We have individuals by the hundreds of thousands who in one way or another have been exposed to all this evidence of change. What will these people, *the people*, request or demand in regard to regulation of not only medicine *qua* medicine but of the healing art?

* Reprinted by permission from Federation Bulletin, 1967, 54, 46. This is part of an address presented before the Annual Meeting of the Federation of State Medical Boards of the United States in Chicago, February 5, 1966.

† Director, Department of Medical Ethics, American Medical Association, 535 North Dearborn Street, Chicago, Illinois 60610.

We know we are a permissive people. We believe in free choice—in the right to be wrong. The people in some states believed rightly or wrongly that naturopaths should be licensed and then hoped and prayed no one would use their services.

We license podiatrists, optometrists, clinical psychologists to act as limited practitioners and hope they will practice within the scope of their licenses. We recognize more than 50 paramedical groups by certification, registration or licensure. We, *the people*, do this. We also license physicians who may do everything done by paramedical groups; but they cannot because of medicine's complexity.

We, the people, have created medical practice acts, nursing practice acts, optometric practice acts, and many other like acts to regulate and control the conduct of individuals who for the most part are not licensed to exercise independent professional judgment. We do this in a haphazard manner. We have a crazy quilt jurisprudence as a result of statutory enactments. Medicine started this parade of statutes. It has encouraged some other groups to secure the enactment of statutes. In addition many groups on their own but with public support have secured enactment of these statutes.

It is no speculation to predict that this proliferation of statutes for the control of minority groups practicing within the field of the healing art will continue. It is no speculation to predict that the scope of practice of the paramedical will expand to the extent that physicians relinquish more and more of their practice. (An example of extension of practice is found in nursing. How many states by statutes, court decisions, or attorney general opinions permit nurses to perform intravenous therapy? This practice would have been condemned as completely beyond the scope of nursing just a few years ago.)

I said that medical practice acts were drafted when medicine was the all-inclusive practice of healing. I said that medical practice acts were drafted microscopically. So have the other licensure, registration and certification acts been drafted microscopically. Each was drafted to control its own practices and its own practitioners. Each bears some relation to the guild systems of old. New guilds have been created and given sanction by law.

It is no speculation to predict that this continual recognition of independent groups in the field of the healing art will lead to chaos.

When medicine and the healing art were

synonymous the law was adequate to protect people in their relations with each other. Now that the medicine is not completely synonymous with the "healing arts," when the practice of medicine and the practice of ancillary, nonprofessional services are of necessity included in the healing process and are regulated by statutes, can the law tolerate lack of coordination? Can the law tolerate independent, separate practice acts? Will people tolerate fragmentation of responsibility in the practice of the healing art? In the last 50 years the law relating to the healing arts has become chaotic. As may happen, the good of the majority is jeopardized because of efforts to protect rights of minorities. The problem is especially critical in the field of the healing art because medicine, a profession, relies on self-regulation. Parvenus in the field of healing arts are not professions. They have no concept of self-regulation; they have no mechanism for self-regulation.

In view of the changes in medical knowledge, in view of the changes in medical practice applying that knowledge, in view of the development of ancillary health personnel, can it be said that medicine has demonstrated leadership in formulating sound public opinion in regard to necessary control of all who engage in the practice of the healing art? Are boards of medical examiners to continue in their present role without any control over those others in the healing arts who carry out the physician's orders? Is it time for medicine in general and boards in particular to examine the macrocosm?

Medical practice acts can remain what they are, and independent acts giving rights and responsibilities to others can be adopted as at present. How long will it be before a state licenses or certifies audiologists? What will happen?

Today, because we are in the midst of change, in the midst of evolutionary process, we are guided by law based on tradition. Law follows science, they say, by a century. Law follows the will of the people by less than a century. But there is a time lag between.

We are interpreting existing law according to custom and tradition. Sooner or later a crystallization of public opinion will force a change in statute or interpretation.

Today we, a people, believe that the responsibility for medical care rests in the hands of the physician. It is the law that he alone may exercise independent professional judgment. In a sense he is captain of the ship, the man who must give the orders.

This may change. Some limited practitioners may arrogate to themselves the right to make their own independent professional judgments, and this right may be ratified by law. If this comes about the physician as an individual loses little or nothing. His patients may lose and, having lost, impose greater burden on him, the physician, to reverse a course of illness.

If we continue as we have, the prestige of medical boards may be diluted, because new boards to examine the ancillary personnel take on importance of their own.

If the physician is to remain as the individual responsible for diagnosis and treatment shouldn't he or his peers be responsible in some way for insuring the competence of those who assist him in diagnosis and treatment?

If the physician is captain of the ship responsible for determining the course and issuing orders to those below him shouldn't he or his peers have something to say about the competence of his crew?

It is not speculation to suggest that we, of our ages, and in our positions in our life, professions and society have a responsibility to read the future as best we can and prepare for it. At the moment we should speculate. We should ask: Are we letting the future happen without plan?

The law relating to medicine can change drastically. It probably will change: (1) because medicine, in all its aspects, will change; (2) because medicine, intent on scientific advance, will neglect the impact of change on society; (3) because medicine will probably rely on tradition as the guide for the future; and (4) because paramedical services will (a) increase and multiply, and (b) continue to insist on ever-expanding scope of practice.

Because indications are strong that medicine in its many aspects will grow, develop and change, it would seem that medicine should plan ahead, should be prepared for developments in the future—whatever those developments will be.

Physicians should be alerted to possibility of change generally, preferably as juniors or seniors in medical school. As residents they should again be alerted to their relationships to their profession, their peers and paramedical people and finally the physician in practice should regularly be impressed with the fact that physicians are a part of society, citizens and voters in the state, equipped for leadership and obligated to be leaders.

In the future physicians will have to become more involved in civic and legislative affairs to educate the people. It is the reflection of the

people's attitudes that becomes the law. That attitude can be constructively formed by physicians. It can be formed by demagogues. The choice and the future rest with physicians.

► HEALTH DEPARTMENT NOTES

Immunization Program

IN JANUARY, 1966 the D.C. Department of Public Health began a Birth Certificate-Immunization Record Card Program to encourage parents to have their children immunized against diphtheria, whooping cough, tetanus, polio, measles and smallpox by the beginning of the infant's second year of life.

Results of studies made by the Health Department in 1965 showed that deficiencies in immunization levels of District children frequently were discovered only upon a child's entry into school. The studies involved 1,260 families selected at random and 1,500 births in selected census tracts over a 3-month period. From the compilation of data it was determined that the birth certificate could be the foundation upon which an immunization program could be developed since, by law, births must be recorded.

Each resident live birth is followed under this program. Before a baby is a month old the Health Department contacts the parent by mail and suggests the importance of participating in an immunization program. A second letter, enclosing a questionnaire, is sent when the infant is about 2 months old. When the questionnaire is completed by the parent, indicating that the baby is under medical supervision either with a private physician or at a Health Department clinic, it is returned to the Health Department. A wallet-sized plastic Birth Registration Card then is issued to the parent for the infant. The card serves as notification of birth and carries on its reverse side space for an immunization record for both the basic series and booster shots.

By the time the infant has reached the age of 5 months any parent who has not responded to the letters will be contacted by telephone. If a parent still does not respond, a public health nurse will visit the family. If located, the infant then will be followed until he is receiving medical attention at the place of his parent's choice.

Staff members have found that parents who



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have begun their baby's immunization program at Health Department Well Baby Clinics rarely fail to complete the series. When a lapse occurs, however, the child's family is contacted and, in most cases, the baby is brought back to the clinic for the balance of the inoculations.

In 1966 there were 16,367 resident live births. A study of statistics for the immunization program reveals that 3,042 of these were recorded during the period from July 2 through October 7. Of this number, 2,705 (88.9 per cent) received immunizations either from private physicians or at Health Department clinics. The remaining 337 infants (11.1 per cent) did not participate because of the following reasons: moved from D.C., medical contraindications, death, or inability to locate the child's family.

It is our hope that this program will play an important part in encouraging early and complete childhood immunization.

MURRAY GRANT, M.D., D.P.H.
D.C. Director of Public Health

► NEW MEMBERS

Active

JAMES B. D'ALBORA, M.D. Office: 5406 Connecticut Avenue, N.W. Born in Brooklyn, N.Y. Medical degree: Georgetown University, 1960. Specialty: Pediatrics.

CHARLES PATTON DUVALL, M.D. Office: 2141 K Street, N.W. Born in Evanston, Ill. Medical degree: University of Rochester, 1962. Specialty: Internal Medicine.

JOSEPH FRANCIS DYER, JR., M.D. Office: 915 Rhode Island Avenue, N.W. Born in Washington, D.C. Medical degree: Howard University, 1944. Specialty: Internal Medicine.

BERNARD E. FLAHERTY, M.D. Office: 617 G Street, S.W. Born in Peru, Indiana. Medical degree: Indiana University, 1944. Specialty: Psychiatry.

ARMANDO ANDRES GARZON, M.D. Office: 1208 H Street, N.E. Born in Santiago de Cuba, Cuba. Medical degree: University of Havana, Cuba, 1954. Specialty: General Practice.

LAWRENCE MILES GREENBERG, M.D. Office: 4222 Mathewson Drive, N.W. Born in St. Paul, Minn. Medical degree: University of Minnesota, 1959. Specialty: Child Psychiatry.

JAMES E. HEFFERN, M.D. Office: 7552 Alaska Avenue, N.W. Born in Washington, D. C. Medical degree: Georgetown University, 1964. Specialty: General Practice.

RICHARD PAUL KARPAWICH, M.D. Office: 1835 Eye Street, N.W. Born in Worcester, Mass. Medical degree: Georgetown University, 1963. Specialty: Radiology.

HASKINS KAZUNORI KASHIMA, M.D. Office: Georgetown University Hospital. Born in San Francisco, Calif. Medical degree: Yale University, 1958. Specialty: Otolaryngology.

SUZANNE KAUFMAN KLING, M.D. Office: 1616 18th Street, N.W. Born in Budapest, Hungary. Medical degree: George Washington University, 1943. Specialty: Psychiatry and Psychoanalysis.

EDWARD RONALD KOLVEREID, M.D. Office: 2141 K Street, N.W. Born in Lodi, Ohio. Medical degree: Ohio State University, 1960. Specialty: Obstetrics and Gynecology.

MAHMOUD MOURAD, M.D. Office: Georgetown University Hospital. Born in Cairo, Egypt. Medical degree: University of Cairo, 1952. Specialty: Physical Medicine and Rehabilitation.

A. FREDERICK NORTH, JR., M.D. Office: 1111 18th Street, N.W. Born in Milwaukee, Wisconsin. Medical degree: Yale University, 1956. Specialty: Pediatrics.

WILLIAM JAMES POLK, M.D. Office: 1904 R Street, N.W. Born in Philadelphia, Pa. Medical degree: University of Pennsylvania, 1962. Specialty: Psychiatry.

Associate

WARREN HARVEY HELLER, M.D. Office: Public Health Service. Born in Brooklyn, N.Y. Medical school: Downstate Medical Center, N.Y., 1966. Specialty: Public Health.

EDWIN R. LAMM, M.D. Office: Belair Professional Village. Born in Far Rockaway, N.Y. Medical degree: University of Buffalo, 1960. Specialty: General Surgery.

EMANELE MANNARINO, M.D. Office: Veterans Administration. Born in Rome, Italy. Medical degree: University of Rome, 1951, and Duke University, 1963. Specialty: Neurological Surgery.

BRUCE HUNTER SISLER, M.D. Office: Post Office Department. Born in Pittsburgh, Pa. Medical degree: Hahnemann Medical College, 1926. Specialty: Administrative Medicine.

LEONARD J. TRILLING, M.D. Office: Bureau of Medicine, FDA. Born in Paterson, N.J. Medical degree: Columbia University College of Physicians and Surgeons, 1934. Specialty: Dermatology.

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1. Crunden, A. B., Jr., and Davis, W. A.: Am. J. Obst. & Gynec. 65:311 (Feb.) 1953.



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News & Personals

Summary of Executive Board Actions

Proceedings of January 22 Meeting

Dinner for the Board members was served in the Exhibit Hall of the Medical Society. Dr. Edward K. Nicklas, Chairman, presided at the meeting. Present were Drs. Frank S. Bacon, Raymond T. Holden, John J. Hughes, William S. McCune, Jed W. Pearson, Jr., Gudrun Augustin-Rueckert, and Mr. George W. Cooley, Secretary. The meeting was called to order at 7:15 p.m.

The minutes of the December 18, 1967 meeting were approved as mailed.

Committee Meetings: The Secretary reported the following committees had met since the last meeting of the Board:

- | | |
|-------------|--|
| December 20 | Board of Credentials |
| 20 | Ad Hoc Committee for the Study of
Cancer of the Sigmoid Colon and
Rectum |
| January 8 | Regional Medical Program Committee |
| 16 | Grievance Committee |
| 17 | Board of Credentials |

Board of Credentials: On recommendation of the Board of Credentials, 14 applicants were elected to Active membership, 5 to Associate membership, and 1 to Resident-Intern membership. Their names appear on page 186. Approval was also given to the following changes in membership status:

Reinstatements

Active: John B. Johnson and Sheridan L. C. Perry

Transfers

Active to Life: Harry F. Anderson, Sterling Bockoven, Eugene Cole, Henry L. Darner, George R. Gable, John M. Gaines, Joseph J. Greenlaw, H. S. Hoffman, Henry A. Hornthal, R. Frank Jones, Richard J. McNulty, William Ross Morris, Willis B. Morse, J. Francis Rogers, and Amanda L. Stoughton

Special to Life: Edgar W. Davis and Charles J. Demas

Associate to Active: Bahram Bahrami, Antonio L. Canadas, Bomen H. Dim, Liselotte Hochholzer, Maud J.

Peereboom, Jose R. Puig, Fausto Ramon, Ginlio I. Scazzella, Arturo C. Uy, and Franz-Joseph Weber

Active to Associate: Theodore R. Bledsoe, Edward E. Gahres, Ottavio Gelmi, Ruth E. K. Jakoby, Eduardo Oliveira, Bahman Teimourian, and Alan W. Winshel
Active to Special: Claude R. Ball, John P. Gallagher, and John J. Leahy

Associate to Special: William J. B. Orr

Resignations

Active: Frank J. Grabill, Fred S. Grunwald, Edward John Jahnke, Jr., Lawrence F. Misanik, James B. Moffett, Thomas DeWitt Reynolds, John J. Sweeney, and Paul E. Zehfuss

Associate: James B. Bain, Henry L. Bastien, Dexter M. Bullard, Joseph M. Coeimano, Harry Kessler, Francis C. Kirchner, John A. Logan, Louis J. Maciulla, John McM. Menell, Mason Morris, Jr., Anna T. Rand, James W. Sinclair, Sam L. Tabb, and Benjamin S. Turla.

Resident-Intern: Larry Bernard Silver

The dues of Dr. John J. Blasko (Associate) were remitted because of disability.

Medical Problems of "Hippies": This matter was discussed at some length following a report given by a physician who had served in a special clinic in San Francisco which was devoted to providing medical care and advice to this group of young people. The President was authorized to select an ad hoc committee to review the problem and report back to the Executive Board.

Scientific Assembly—1968: Dr. McCune reported that the 1968 SCIENTIFIC ASSEMBLY was scheduled for November 21–23 at the Washington Hilton Hotel and reviewed briefly the potential plans of the Committee on Continuing Education. He pointed out that despite poor attendance this year almost every member to whom he had talked believed this activity should be continued and that every effort should be made to make it successful.

Corporate Practice for the Professions: The propriety of seeking legislation to permit professionals (primarily physicians, dentists, and attorneys) to incorporate as professional corporations was discussed and referred to the Medico-

legal Committee. This Committee is to report its opinion to the Committee on Medical Ethics and Professional Conduct.

Letter to Mayor Washington: The letter sent to Mayor Washington by Dr. McCune was approved and he was commended for this action.

Policy re Guidelines for Medical Staffs in Hospitals with Intern and Resident Training Programs: Prior to the meeting a policy statement of the AMA entitled "Guidelines for Medical Staffs in Hospitals with Intern and Resident Training Programs" had been distributed to the Board members. After considerable discussion it was voted to recommend these guidelines to the hospitals.

Other Business

1. The following recommendation of the Committee on Aviation Medicine was presented and approved: "That an area conference on helicopter ambulance service be held with hospital administrators and other officials for educational purposes and to determine their interest and support" in developing such a service locally.

2. Listing in the Yellow Pages of the telephone directory. The Secretary reported that the Medical and Chirurgical Faculty of the State of Maryland had approved guidelines for specialty listings in the Yellow Pages. Such listings are not now carried in the Yellow Pages for the Washington area. The Board voted to refer this matter to the Medical Bureau Committee for further study, with the suggestion that the Committee seek the advice of the Society's legal counsel on alternative methods of assuring proper specialty listings, if such is possible.

3. Dr. McCune reported briefly on the national meeting of the Regional Medical Program Coördinators held recently. He said it was indeed a massive program and that every effort should be made to enlist the interest of area physicians and institutions.

4. Dr. McCune reported that the D.C. Health Department expected to proceed to implement Title 19 by July 1, 1968. He pointed out that some 3 million dollars would be available to 129,000 people with family incomes of less than \$4,300. It was evident, he stated, that this was totally insufficient to provide an adequate program of hospital and medical care. The Health Department expects to contact all physicians in order to develop a panel on medical care and would use the Society's Relative Value Scale in payment to physicians. It was not understood

what would happen if funds were not adequate but it was conjectured that "participating physicians" would be asked to accept fees on a pro rata basis.

There being no further business, the meeting was adjourned at 9:30 p.m.

MEETINGS

A Sibley Scientific Symposium will be held on Saturday, March 30, from 9:00 a.m. to 12:00 noon, in the Sibley Memorial Hospital Auditorium. The topic, "The Patient Before and After Surgery" will be presented by 3 guest speakers: Dr. Bernard Zimmermann, Professor of Surgery, West Virginia University School of Medicine, Morgantown; Dr. J. O'Neal Humphries, Assistant Professor of Medicine, Johns Hopkins University School of Medicine; and Dr. Ephraim Siker, Director of Anesthesiology, Mercy Hospital, Pittsburgh. All interested physicians are cordially invited to attend.

The Medical and Chirurgical Faculty of the State of Maryland extends an invitation to members of the D.C. Medical Society to attend its 170th Annual Meeting, April 17-19, in Baltimore.

A special event will be the "Quiz the Experts" Luncheon at the Sheraton-Belvedere Hotel, at 12:30 p.m. on the opening day, April 17.

All scientific sessions will be held at the Alcazar. Speakers Wednesday afternoon, April 17, will be Dr. J. Hartwell Harrison, of Peter Bent Brigham Hospital; Dr. Charles M. Caravati, of the Medical College of Virginia; and Dr. F. Mason Sones, Jr., of the Cleveland Clinic Foundation.

On Thursday Medical Grand Rounds will be conducted in the morning by Dr. A. McGehee Harvey and his staff, of Johns Hopkins, and Surgical Grand Rounds in the afternoon by Dr. Robert W. Buxton and his staff, of the University of Maryland.

Other guest speakers, Thursday and Friday, will be Dr. Maurice B. Strauss, of Tufts University; Dr. Arthur M. Vineberg, of the Royal Victoria Hospital; Dr. Clifford F. Gastineau, of the Mayo Clinic; Dr. Louis M. Hellman, of the State University of New York; and Dr. Stanley Baum, of the Graduate Hospital, University of Pennsylvania.

There is no registration fee. Credits for attendance will be given by the Academy of General

Practice. A detailed program may be secured by writing to Dr. Thaddeus E. Prout, 1211 Cathedral Street, Baltimore, Md. 21201.

Georgetown University School of Medicine is sponsoring a Symposium on Diabetes to be held Friday, May 24, beginning at 9:00 a.m., in the Gorman Auditorium at the Medical Center. Current concepts in the development and treatment of diabetes mellitus will be presented by authoritative speakers.

There will be 6 out-of-town speakers and several from Washington, including Dr. James M. Moss, Clinical Professor of Medicine, and Dr. John J. Canary, Associate Professor of Medicine, both of Georgetown University.

► GENERAL NEWS

Four sections of the Medical Society of the District of Columbia have reported new officers.

Officers of the **Section on Neurology and Neurological Surgery** are now:

Dr. Marvin C. Korengold, *Chairman*; Dr. John T. Lord, *Vice Chairman*; and Dr. Elmo F. Masucci, *Secretary-Treasurer*.

The Section on Pathology and Laboratory Medicine has chosen as officers:

Dr. William C. Swatek, *Chairman*; Dr. Carlos R. Matta, *Vice Chairman*; and Dr. Robert A. Dietrich, *Secretary-Treasurer*.

The Section on Dermatology has elected:

Dr. Robert S. Higdon, *Chairman*, and Dr. Robert B. Point, *Secretary*.

At a dinner meeting at the Cosmos Club on

January 21, the 1968 officers of the **Section on Allergy** were installed:

Dr. Roland B. Scott, *Chairman*; Dr. Solomon E. Barr, *Chairman-elect*; and Dr. Robert T. Scanlon, *Secretary-Treasurer*.

New officers of the **Pan American Medical Society** are:

Dr. Charles J. Savarese, *President*; Dr. Hector E. Castro, *Vice President*; Dr. William H. Cooper, *Secretary*; and Dr. Chalon Rodriguez, *Treasurer*.

Dr. Charles L. Hudson, immediate Past President of the American Medical Association, has been named **Director of the AMA's Socio-Economic Activities Division**. Dr. Hudson, an internist, was formerly a member of the Department of Internal Medicine at the Cleveland Clinic and Associate Clinical Professor of Medicine at Western Reserve University.

Dr. Hudson addressed the Annual Luncheon of the Medical Society of the District of Columbia at the Hotel Statler-Hilton, November 21, 1967. His address was published in the February issue of the *MEDICAL ANNALS*, pages 125-127.

Dr. Harry F. Dowling, Professor and Head of the Department of Medicine, University of Illinois College of Medicine in Chicago, has completed a sabbatical year at the National Library of Medicine as a Health Science Scholar. During the past year he concentrated on the compilation of materials relating to his "Study of the Discovery, Development, Regulation, and Use of Drugs." This research was part of a project which is being supported by a Special Scientific Project Award, under NLM's Extramural Programs. Dr. Dowling for many years was an Active member of the D.C. Medical Society.

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Dr. William W. Bauer, Director Emeritus of the Department of Health Education of the American Medical Association, died December 25, 1967. He was a nationally known figure in both medicine and education.

A native of Wisconsin, he received his medical degree from the University of Pennsylvania in 1917 and served with the Army Medical Corps during World War I.

Dr. Bauer became Director of AMA's Department of Health Education in 1932. He became Associate Editor of *Hygeia*, changed the name of the magazine to *Today's Health* in 1949, and served as its Editor until 1957.

He was a noted speaker on health education topics, author and co-author of 9 books and numerous articles pertaining to health, and wrote a daily syndicated newspaper column on health and medicine. He was in charge of AMA radio programs for nearly 20 years.

After retiring in 1961 he continued to serve as consultant to the AMA's Division of Socio-Economic Activities.

▲ PERSONALS

Dr. Oscar B. Hunter, Jr., was installed as President of the Southern Medical Association during its 61st Annual Meeting in Miami Beach, Fla., November 13-16, 1967. His father, Dr. Oscar B. Hunter, Sr., was President of SMA in 1948, and he is the first SMA President to follow his father in the same position. Dr. Hunter, Jr. is Director of the Hunter Memorial Laboratory at Doctors Hospital and is also President of the College of American Pathologists.

Dr. Alice D. Chenoweth took office as President of the American Medical Women's Association during its Annual Meeting in Atlanta, Ga., November 30-December 2. Her inaugural address, entitled "Exploring Medical Talents," was concerned with the possibility of utilizing more women during the medical manpower shortage.

Dr. Chenoweth, a graduate in medicine from Vanderbilt University, received her undergraduate degree and a Master's degree from Northwestern University. She is Consultant in Pediatrics to the Children's Bureau. Her husband, Dr. John R. Pate, also an Active member of the D.C. Medical Society, is Director of the D.C. Bureau of Disease Control.

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Dr. Jack L. Derzavis was elected President of the Noah Worcester Dermatological Society at its Annual Meeting, held at Runaway Bay, Jamaica, West Indies, January 15, 1968.

Dr. Charles S. Tidball, Professor and Chairman of the Department of Physiology, George Washington University, shares with Assistant Professor Marie Mullaney Cassidy the 1967 Scientific Achievement Award in the Biological Sciences of the Washington Academy of Sciences. The awards for "basic contributions on mechanisms of transport across biological membranes" were presented at the Academy's 70th Annual Dinner Meeting on January 25. Dr. Tidball is an Associate member of the D.C. Medical Society.

The Board of Trustees of the American Medical Association, during its recent annual review of the membership of its councils and committees, reappointed the following members of the D.C. Medical Society to serve on the bodies designated:

Dr. James E. Fitzgerald, Council on National Security

Dr. R. Lomax Wells, Chairman, Council on Occupational Health

Dr. Don D. Flickinger, Committee on Aerospace Medicine

Dr. William J. Kennard, Committee on Aerospace Medicine

Dr. Charles E. Rath, Committee on Blood

Dr. K. Albert Harden, Committee on Continuing Medical Education

Dr. John A. Kenney, Jr., Subcommittee on Skin of the Committee on Rating of Mental and Physical Impairment

Dr. Raymond T. Holden, Chairman, Committee on Human Reproduction

New appointees are: **Dr. Robert H. Barter**, to the Council on Scientific Assembly, and **Dr.**

Oscar B. Hunter, Jr., alternate representative of the College of American Pathologists on the Interspecialty Committee.

Dr. Harry Kessler, an Associate member of the Medical Society, retired in January after 33 years of association with the Veterans Administration. He joined the staff of the VA Hospital in The Bronx, N.Y., in October 1935. A specialist in the field of physical medicine and rehabilitation, he became Chief of Physical Medicine and Rehabilitation in the VA's Washington, D.C. Area Medical Office in 1950. In 1951 he was the first to be named head of the agency-wide program for rehabilitation of veterans with spinal cord injury. He has been succeeded in this post by **Dr. Emanuele Mannarino**, Chief of the Neurological Section since 1964.

Among those elected Fellows of the American College of Physicians, November 11, 1967, were **Drs. Gilbert M. Eisner, W. Tabb Moore, and T. James Waters**, of Washington. **Drs. William J. Collins and Richard Schoenfeld** were elected Associate members at the same time.

► DOCPAC BRIEFS

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DEAR DOCTOR: Are you worried about our country? Do you feel that national events are going to your liking?

Your response would very likely be "yes" to the first question and "no" to the second. How did we get into such a predicament? There is perhaps no one single answer. But certainly contributing to our sorry state of affairs is the indifference of many physicians. While some of our members are too busy, or too unconcerned, or too lazy to take an active part in electing proper public officials, the left-wingers, the big labor bosses, and their pink and red allies are out battling ceaselessly to take over our country, and if they do they will reduce it to a third-rate entity, even as the Socialists have finally succeeded in doing to Great Britain.

Don't you think it is high time you did something about it? Then, get busy and join DOCPAC, the local affiliate of AMPAC. And work in the primaries of both parties to insure the election of men—Democrats and Republicans—who will

help restore this country to its place of honor and leadership among the nations of the world. This is an election year. If we lose this one, we may never get another chance!

DARRELL C. CRAIN, M.D.

► OBITUARIES

Your Editorial Board
announces with sorrow
the death of

George W. Cooley

February 15, 1968

Mr. Cooley was Secretary-Treasurer of the Medical Society of the District of Columbia and Managing Editor of the *MEDICAL ANNALS* from July 1, 1962.

A later issue will give details of his life and will enumerate some of his many contributions to the field of medical socioeconomics.

Roger Morrison Choisser, B.S., M.D.

(1891-1967)

DR. ROGER M. CHOISSER, Professor Emeritus of Pathology at George Washington University School of Medicine, died, December 19, 1967 at his home, 4645 Hawthorne Lane, N.W.

Born in Harrisburg, Ill., February 13, 1891, Dr. Choisser graduated from the University of Chicago in 1915 and from Rush Medical College in 1917. He served in the Navy during World War I and then spent 3 years with the Marine Corps, during which time he was one of the first flight surgeons on duty in Haiti and was decorated by its government. He retired from the Navy with the rank of Lt. Commander in 1929.

Dr. Choisser joined the faculty of George Washington University as Associate Professor of Pathology and Bacteriology in 1931. He continued on the faculty for 25 years, most of those years as Professor of Pathology. In 1952 he received the Award of Merit from George Washington University.

He served on the medical staffs of George

Washington, Doctors, Emergency, Gallinger (now D. C. General), and Sibley Memorial Hospitals.

He was instrumental in establishing a Civil Defense-sponsored blood and plasma bank, the first in Washington, during World War II.

Dr. Choisser had been an Active member of the Medical Society of the District of Columbia since 1933. He was a Fellow of the American College of Physicians and the College of American Pathologists, a member of the American Medical Association, the American Association of Blood Banks, the American Association of Pathologists and Bacteriologists, and the D. C. Clinico-Pathological Society. He was a member and Past President of the Washington Society of Pathologists and a founding member and Past Treasurer of the Washington Academy of Medicine.

He leaves his son, Dr. Robert V. Choisser, of 5512 Parkston Road, N.W., a member of the Medical Society, and 2 daughters, Mrs. Robert R. Montgomery, of 4919 Fort Sumner Drive, Bethesda, Md., and Dr. Marion Mills, a pediatrician living in San Diego, Calif.

Don Johnson, LL.B., M.D.

(1892-1968)

DR. DON JOHNSON, who had practiced otolaryngology in Washington for 40 years, died in Chicago, January 2, 1968, while on a visit to his daughter.

Dr. Johnson was born in Spring City, Utah, October 23, 1892. He first studied law at Catholic University, earning his way by pitching on the baseball team, and received his degree in 1916. He joined the Army during World War I, was commissioned at the Presidio, and served at Camp Lee, Virginia.

On return to civil life he practiced law for a year in Utah, but the urge to study medicine returned him to Catholic University where he taught law while studying the basic sciences necessary for admission to George Washington University School of Medicine. He graduated in 1925. After serving an internship at Walter Reed Army Hospital, he took his specialty training in otolaryngology at the Episcopal Eye, Ear and Throat Hospital and served on the staff until it was merged into the Washington Hospital Center.

Dr. Johnson was respected by his superiors for his ability and conscientious attention to his patients. Refusing seniority on the attending staff, he nevertheless gave generously of his time to trainees, rewarding them with surgical instru-

ments on graduation. In addition to Episcopal, he was on the staff of Children's, Suburban, Doctors, and George Washington University Hospitals.

He was elected an Active member of the Medical Society of the District of Columbia in 1931. He was a member of the American Medical Association, a Fellow of the American Academy of Otolaryngology and Ophthalmology, and a member of the Hippocrates-Galen Medical Society.

He was a member of the Columbia Country Club, winning 2 club championships. He was an able golfer and admired for his fairness in competition. His love of athletics and the outdoors was also evident in his ability as a hunter. Ironically, he suffered the onset of his terminal illness in a duck blind on Currituck Sound.

His indomitable spirit kept him periodically active in his last 2 years, both in his devotion to his many loyal patients and his enthusiasm for golf.

He is survived by his wife, Mrs. Marjorie Johnson, of the home, 5807 Ridgefield Road, Springfield, Va.; a son Dr. Don Robert Johnson, of Wheaton, Md., an Associate member of the Medical Society; and a daughter, Mrs. Marjorie Allegrette, of Lake Forest, Ill.

PRESTON A. McLENDON, M.D.

Changes Due to Environmental Pollution

—Bartolos

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Fusion for Cervical Spondylosis—Fox

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Hyperglycemia from Dilantin—Said, Fraga and Reichelderfer

(Continued from page 172)

diseases which may cause hyperglycemia and glycosuria. The mode of action of diphenylhydantoin in producing this effect has not been determined.

References

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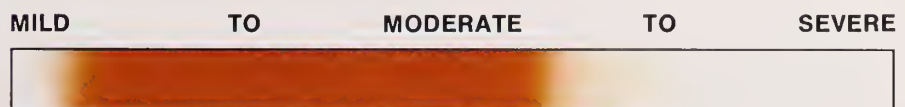
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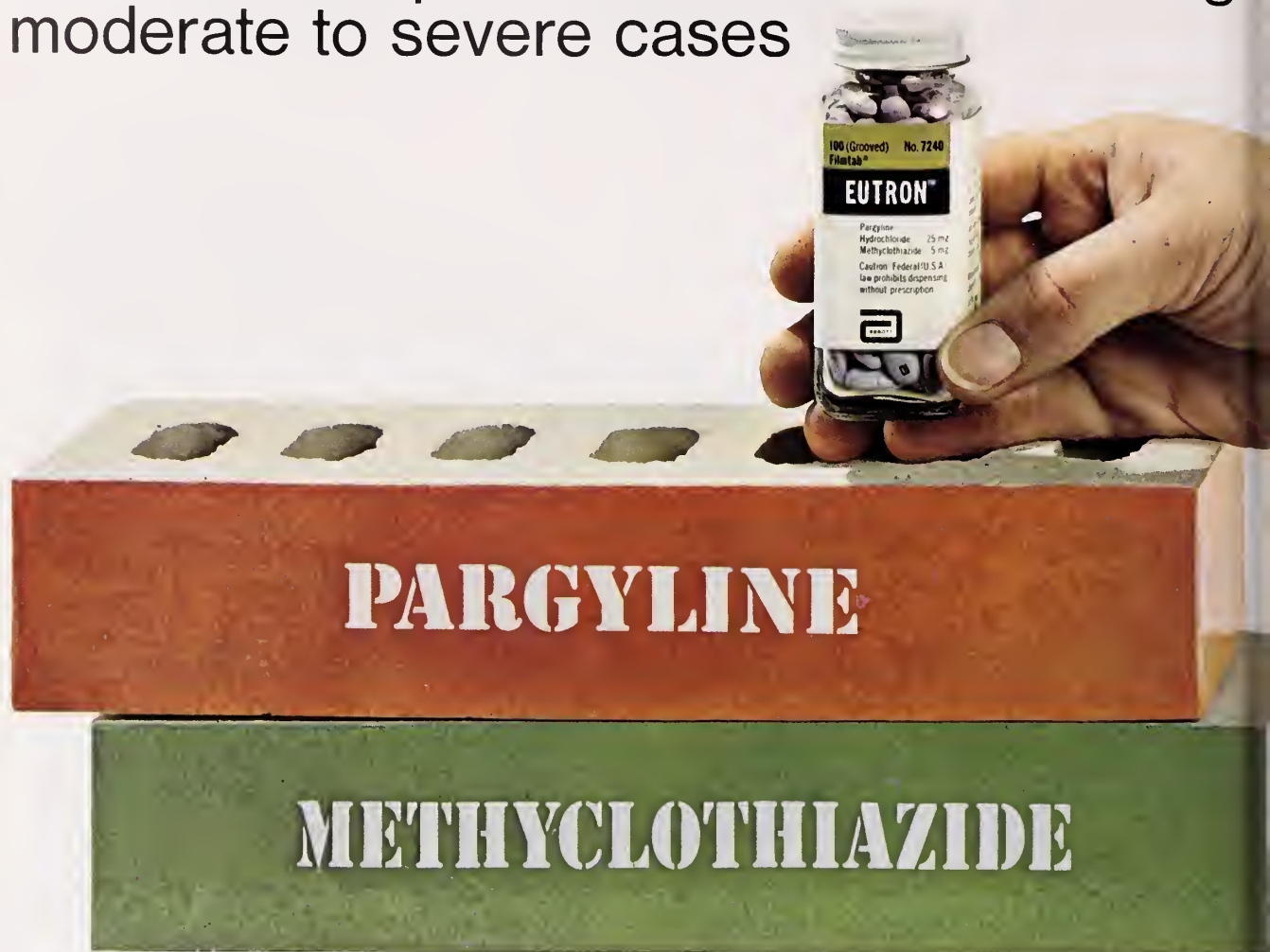
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Affords almost uniform diastolic reduction in all body positions

Eutron lowers diastolic pressures nearly equally, whether your patient is standing up or lying down.

Thus, in clinical trials, average *standing* diastolic readings were reduced from 112 pre-treatment to 90 post-treatment; *sitting* from 115 to 95; and *recumbent* from 112 to 94.

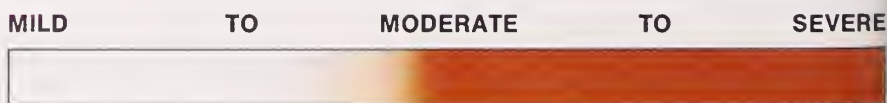
Note that following Eutron, the diastolic reductions were nearly alike in all three body positions.

Use Eutron for managing your moderate to severe cases. Its building blocks enhance each other; hence lesser doses often suffice.

Once a day, every day

EUTRON™

PARGYLINE HYDROCHLORIDE 25 mg.
with METHYCHLOTHIAZIDE 5 mg.



See Brief Summary on final page of advertisement

ENDURON[®] ENDURONYL[®]

METHYLOTHIAZIDE

Each tablet contains
Methylothiazide 5 mg. with
Deserpidine 0.25 mg. or 0.5 mg

Indications: Edema and mild to moderate hypertension (Enduron), and mild to moderately severe hypertension (Enduronyl). More potent agents, if added, can be given at reduced dosage.

Contraindications: Sensitivity to thiazides; severe renal disease (except nephrosis) or shutdown; severe hepatic disease or impending hepatic coma (hepatic coma due to hypokalemia has been reported in patients on thiazides). Do not use Enduronyl in severe mental depression, suicidal tendencies, active peptic ulcer, or ulcerative colitis.

Warnings: Consider possible sensitivity where there is history of allergy or asthma. If added potassium is indicated, dietary supplementation is recommended. Reserve enteric-coated potassium tablets for cautious use only when necessary, as they may induce serious or fatal small bowel lesions (stenosis with or without ulceration), cause obstruction, hemorrhage, and perforation often requiring surgery; discontinue them immediately if abdominal pain, distention, nausea, vomiting, or g.i. bleeding occurs. Neither Enduron nor Enduronyl contains added potassium.

Precautions: Use thiazides cautiously in severe renal dysfunction, impaired hepatic function or progressive liver disease; also in pregnancy (bone marrow depression, thrombocytopenia, and altered carbohydrate metabolism have been reported in certain newborn). In surgery, thiazides may reduce response to vasopressors, and increase response to tubocurarine. Antihypertensive response may be enhanced following sympathectomy. Watch for electrolyte imbalance (e.g., hyponatremia) in all patients. In hypokalemia (especially in digitalized patients) give supplemental potassium. In hypochloremic alkalosis, give supplemental chloride.

Use rauwolfias with caution in patients with history of peptic ulcer. Rauwolfias with anesthetics may produce hypotension and bradycardia. Discontinue Enduronyl two weeks before elective surgery. Consider vagal blocking agents during emergency surgery. In epilepsy, adjust anticonvulsant dosage. In electroshock, shorten stimulus strength and duration. In occasional patients with depressive tendencies, rauwolfias may precipitate severe mental depression that usually disappears when drug is stopped.

Adverse Reactions: Thiazide reaction include blood dyscrasias (thrombocytopenia with purpura, agranulocytosis, aplastic anemia); elevation of BUN, serum uric acid or blood sugar; anorexia, nausea, vomiting, diarrhea, headache, dizziness, paresthesia, weakness, skin rash, photosensitivity, jaundice, symptomatic gout, and pancreatitis. Cutaneous vasculitis in the elderly has been reported with other thiazides. Adverse effects with deserpidine are qualitatively similar to those with reserpine, but their incidence is lower. These include nasal stuffiness, abdominal cramps or diarrhea, nausea, headache, weight gain, reduced libido and potency, peptic ulcer aggravation, epistaxis, skin eruption, asthma in susceptible patients, electrolyte imbalance, excessive salivation, and a reversible Parkinson's syndrome. Excessive drowsiness, fatigue, weakness, and nightmares may signal mental depression. Thrombocytopenia, purpura, and a symptom manifested by dull sensorium, deafness, uveitis, glaucoma, and optic atrophy are rare allergic reactions to other rauwolfias. Hypotension from antihypertensive agents may precipitate angina attacks in susceptible individuals. Usually adverse reactions disappear when drug is withdrawn.

EUTRON[™] Each tablet contains
Pargyline Hydrochloride 25 mg.
with Methylothiazide 5 mg.

Indications: For treatment of patients with moderate to severe hypertension, especially those with severe diastolic hypertension. Not recommended for patients with mild or labile hypertension amenable to therapy with sedatives and/or thiazide diuretics alone. It is desirable to establish the dosage of Eutron by administering component drugs separately.

TM-TRADEMARK

Contraindications: Pheochromocytoma, advanced renal disease, increasing renal dysfunction, paranoid schizophrenia and hyperthyroidism. Hepatic coma has been reported as consequence of hypokalemia with thiazide therapy. Until further experience is gained not recommended for patients with malignant hypertension, children under 12, or pregnant patients.

Concomitant use of the following is contraindicated: other monoamine oxidase inhibitors; parenteral forms of reserpine or guanethidine; sympathomimetic drugs; foods high in tyramine such as cheese; imipramine and amitriptyline, or similar antidepressants; methyl dopa. 2 week interval should separate therapy and use of these agents.

Methylothiazide is contraindicated in patients with known sensitivity to thiazides.

Warnings: Pargyline hydrochloride is a monoamine oxidase inhibitor. Warn patients against eating cheese, and using alcohol, proprietary drugs or other medication without the knowledge of the physician. When indicated, alcohol, narcotics (meperidine should be avoided), antihistamines, barbiturates, chloral hydrate, and other hypnotics, sedatives, tranquilizers, or caffeine, may be used cautiously in reduced dosage. In emergency surgery 1/4 to 1/2 the usual dose of narcotics, analgesics, and other premedications should be used avoiding parenteral administration where possible. Carefully adjust dose of anesthetics to response of patient. Withdraw pargyline two weeks before elective surgery.

Warn patients about the possibility of postural hypotension. Those with angina or coronary artery disease should not increase physical activity with an improvement in well being. Pargyline may lower blood sugar.

Avoid use of enteric-coated potassium tablets, as these may induce serious or fatal small-bowel lesions consisting of stenosis with or without ulceration. These small-bowel lesions have caused obstruction, hemorrhage and perforation frequently requiring surgery. Medication should be discontinued immediately if abdominal pain, distention, nausea, vomiting or GI bleeding occurs. These products contain no added potassium salts and if added potassium intake is desired, dietary supplementation is recommended. Coated potassium tablets should be reserved for cautious use when adequate dietary supplementation is impractical. In patients with a history of allergy or asthma the possibility of sensitivity reactions should be considered.

Precautions: Measure blood pressure while patient is standing to determine antihypertensive effect. Use with caution in hyperactive or hyperexcitable persons. Such persons may show increased restlessness and agitation. Withdraw drug during acute febrile illness. Watch patients with impaired renal function for increasing drug effects or elevation of BUN and other evidence of progressive renal failure; withdraw drug if such alterations persist and progress. Use with caution in patients with liver disease. As with all new drugs, complete blood counts, urinalyses, and liver function tests should be performed periodically. With prolonged therapy, examine patients for change in color perception, visual fields and fundi. Also reported have been: blood dyscrasias including thrombocytopenia with purpura, agranulocytosis and aplastic anemia; elevations of BUN, serum uric acid, or blood sugar. Symptomatic gout may be induced. In surgical patients thiazides may reduce response to vasopressors and increase response to tubocurarine.

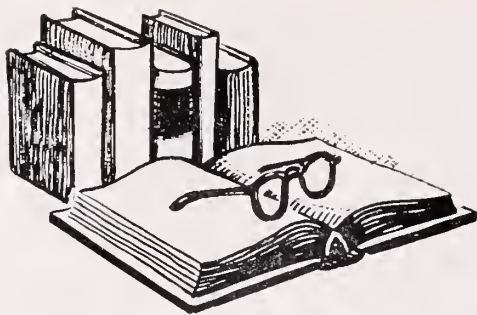
Adverse Reactions: Pargyline may be associated with orthostatic hypotension. Mild constipation, slight edema, dry mouth, sweating, increased appetite, arthralgia, nausea and vomiting, headache, insomnia, difficulty in micturition, nightmares, impotence, delayed ejaculation, rash, and purpura have been encountered with pargyline. Hyperexcitability, increased neuromuscular activity (muscle twitching) and other extrapyramidal symptoms have been reported in a few patients with reduced cardiac reserve.

During intensive or prolonged therapy, guard against hypochloremic alkalosis and hypokalemia (especially the latter if patient is on digitalis). Observe all patients for signs of hyponatremia ("low salt" syndrome).

Reported thiazide reactions also include anorexia, nausea, vomiting, diarrhea, headache, dizziness, paresthesia, weakness, skin rash, photosensitivity, jaundice, and pancreatitis. Nocturia has been observed with the combination.

801438





Book Reviews

Infant Nutrition. SAMUEL J. FOMON, M.D. Price, \$10.50. Pp. 299. Philadelphia: Saunders, 1967.

With the advent of the numerous infant formulas now available to the physician, the art of infant feeding has changed from a major facet of pediatric practice to an almost completely routinized procedure, often influenced to a large extent by the manufacturers of the numerous products offered. With the development of newer information concerning the possibility of untoward effects from overindulgence in vitamins, the functional competence of the kidney of the newborn and premature infant, and the role of the infant's diet in such diverse conditions as atherosclerosis and obesity, the old subject has arrived with a new face. In addition, the Food and Drug Administration has generated a good deal of interest with its proposed regulations governing composition and labeling of foods for special dietary uses, which include infant foods.

Dr. Foman's book is a collation of many diverse facts dealing with the problems of infant nutrition and is designed to furnish the best answers currently available concerning requirements and advisable intakes of the many individual nutrients, plus some information concerning deficiency states. Much of the work reported is Dr. Foman's own, carefully done in the Infant Metabolism Unit of the Department of Pediatrics of the University of Iowa, while the rest of the information is the result of careful evaluation of available studies by others interested in the same fields.

There is an excellent chapter on normal growth, and a detailed examination of the current popular term "failure to thrive," as well as thorough discussions of proteins, fats and fatty acids, carbohydrates, vitamins and minerals. Currently available formulas are covered both in the chapters on milks and milk-based formulas and milk-free formulas. In the latter chapter there is a brief discussion of milk allergy, which serves to delineate the characteristics of the various milk substitutes, but does not adequately cover the problems of food allergy in the infant. A most interesting part of this chapter deals with naturally occurring radioactivity of infant foods and, short as it is, makes worthwhile reading, especially that portion relating to strontium-90 and calcium metabolism.

The bibliography is excellent, brief, and well chosen, and the indexing is completely satisfactory. From a historical point of view, it is to be regretted that Dr. Foman did not give credit to the founders of the Infant Metabolism Unit, the late Dr. Philip C. Jeans and Dr.

Genevieve Stearns, who in the 1930's did much of the early work on calcium and phosphorus metabolism. And a tribute might have been paid to Dr. Michael Underwood, who, as early as 1800, had discovered that heating, dilution, addition of cereals and addition of acids all reduced curd size in cow's milk.

This book is an elegant and readable reference text, recommended to all who are interested in infant feeding, but especially to those who must teach the subject or who for one reason or another must be in a knowledgeable position in the field.

WILLIAM A. HOWARD, M.D.

Respiratory Physiology. N. BALFOUR SLONIM, M.D., PH.D., AND JOHN L. CHAPIN, PH.D. Price, \$8.75. Pp. 199, with 41 illustrations. St. Louis: Mosby, 1967.

The artificial gap between basic concepts and their clinical application is rapidly vanishing. The competent practicing physician must no longer be content with "what" manifestations the patient presents but "how" did they come about and "why." In no branch of medicine is this more apparent than pulmonary diseases where the clinician is constantly faced with the need to understand and use such dimly recalled terms from sophomore physiology as Henderson-Hasselbalch equation, the oxygen dissociation curve, alveolar ventilation and diffusing capacity.

The authors of this work help to define the fundamental principles of the physiology of respiration as a background for their clinical application. To be sure, in such a short treatise they have had to exchange depth for breadth, but they have done it pleasantly and competently. Minor criticisms could be directed toward some degree of dogmatism as well as exclusions particularly in the study of ventilation-perfusion relationships. It is also somewhat annoying to refer to results by an author without giving the specific bibliographic references.

The text reads smoothly and easily and the figures, diagrams, and tables are precise and helpful. The appendix contains useful symbols, definitions, abbreviations, and calculations used in respiratory physiology.

The authors clearly indicate that the target of their book is the medical student, but it might be more appropriately aimed at the physician interested in a quick review.

SOL KATZ, M.D.

Don't let monilia cut broad-spectrum therapy short...

start with **Tetrex-F[®]** tetracycline phosphate complex-nystatin

Use of broad-spectrum antibiotics can cause fungal overgrowth in the alimentary tract... and give rise to symptoms so troublesome that therapy must be prematurely stopped. Tetrex-F (tetracycline phosphate complex-nystatin) helps you circumvent this problem.

The nystatin can prevent overgrowth of monilia; the phosphate complex delivers tetracycline to the blood rapidly. Side effects are infrequent.

High-Risk Patients

Tetrex-F (tetracycline phosphate complex-nystatin) is especially useful in patients most susceptible to fungal overgrowth during tetracycline therapy: (1) the elderly or debilitated, (2) young children, (3) the diabetic, (4) those on long-term tetracycline therapy, (5) those on steroid therapy, (6) those who have had moniliasis before, and (7) pregnant patients with a history of monilial vaginitis.

When you start with economical Tetrex-F (tetracycline phosphate complex-nystatin), you can complete the full course of broad-

spectrum therapy with less chance of losing control elsewhere. A good start for a healthy finish.

PRESCRIBING INFORMATION. For complete information consult Official Package Circular. *Indications:* Infections of respiratory, gastrointestinal and genitourinary tracts and skin and soft tissues due to tetracycline-sensitive organisms, in patients with increased susceptibility to monilial infections. *Contraindications:* The drug is contraindicated in patients hypersensitive to its components. *Warnings:* Photodynamic reactions have been produced by tetracyclines. Natural and artificial sunlight should be avoided during therapy. Stop treatment if skin discomfort occurs. With renal impairment, systemic accumulation and hepatotoxicity may occur. In this situation, lower doses should be used. Tooth staining and enamel hypoplasia may be induced during tooth development (last trimester of pregnancy, neonatal period and childhood). *Precautions:* Bacterial superinfections may occur. Infants may develop increased intracranial pressure with bulging fontanel. In gonorrheal therapy, serologic tests for syphilis should be conducted initially and monthly for 3 months. *Adverse Reactions:* Glossitis, stomatitis, nausea, diarrhea, flatulence, proctitis, vaginitis, dermatitis, and allergic reactions may occur. *Usual Adult Dosage:* 1 capsule q.i.d. Continue for 10 days in Beta-hemolytic streptococcal infections. Administer one hour before or two hours after meals. *Supplied:* Capsules, bottles of 16 and 100. Each capsule contains tetracycline phosphate complex equivalent to 250 mg. tetracycline HCl activity and 250,000 units of nystatin. For Oral Suspension, 125 mg. tetracycline and 125,000 u. nystatin, 5 mL., 60 mL. bottles.

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when he just can't sleep
Tuinal[®]

**One-Half Sodium Amobarbital and
One-Half Sodium Secobarbital
supplied in $\frac{3}{4}$, $1\frac{1}{2}$, and 3-grain Pulvules[®]**



Tuinal helps wakeful patients fall asleep fast, stay asleep all night.

Indications: Tuinal is indicated for prompt and moderately long-acting hypnosis. It is not suitable for continuous daytime sedation.

Contraindications: Barbiturates should not be administered to anyone with a history of porphyria, nor should they be given in the presence of uncontrolled pain, because excitement may result.

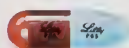
Warning: May be habit-forming.

Precautions: Tuinal should be used cautiously in patients with decreased liver function, since prolongation of effect may occur.

Adverse Reactions: Idiosyncrasy, such as excitement, hangover, or pain, may appear. Hypersensitivity reac-

tions occur in some patients, especially in those with asthma, urticaria, or angioneurotic edema.

Overdosage: C.N.S. depression. **Symptoms**—Depression of respiration and of superficial and deep reflexes, slight constriction of the pupils (in severe poisoning, dilation), decreased urine formation, lowered body temperature, coma. **Treatment**—Symptomatic and supportive (gastric lavage; intravenous fluids; maintenance of blood pressure, body temperature, and adequate respiration). Dialysis may speed removal of barbiturates from body fluids.

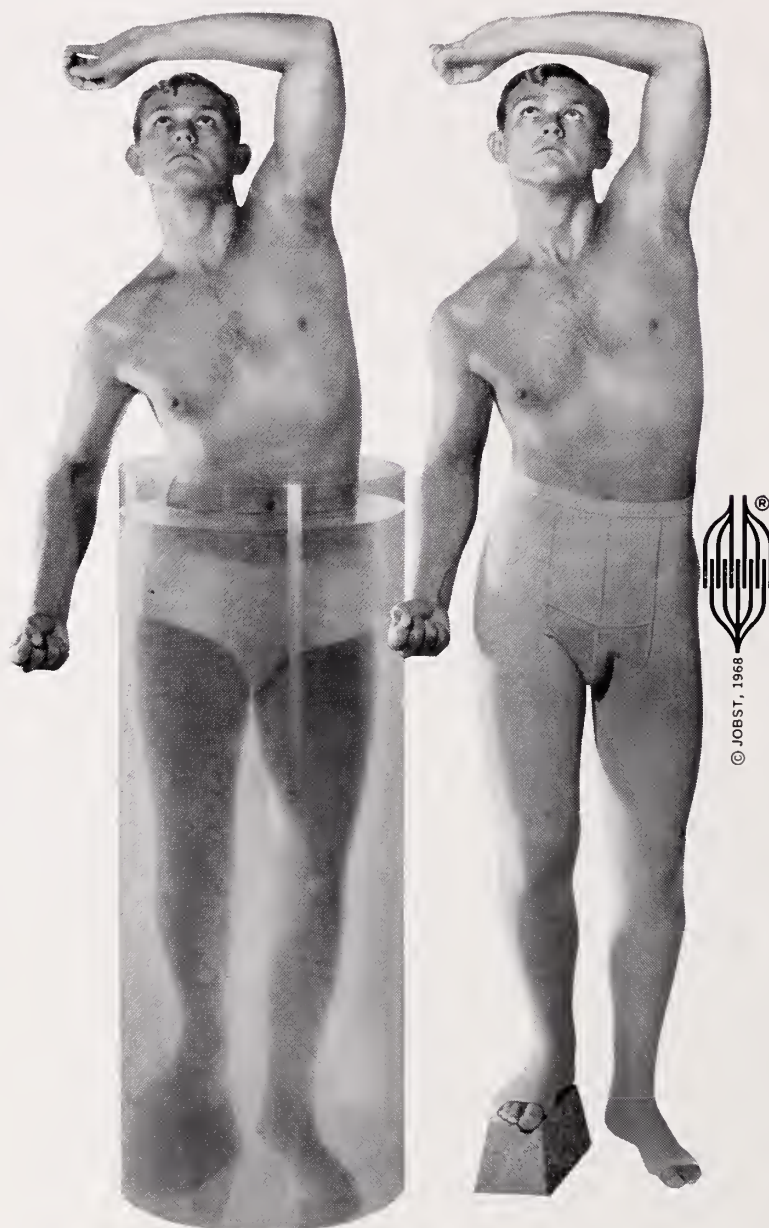


Dosage: 50-200 mg. ($\frac{3}{4}$ -3 grains) at bedtime.

[031767]

Additional information available to physicians upon request.
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—can be treated by immersing the patient in a tank of water, because the hydrostatic pressure in the tank will closely duplicate his normal venous return pressure and thus give him immediate relief.

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nursing care for cancer patients—

...a major concern for their families, *and* for their physicians. In a unique pioneering service, the American Cancer Society is deeply involved in finding a solution.

Recognizing the phenomenal growth of nursing homes—aware of the shortage of nurses—knowing the implications of the extended care benefits of Medicare—the Society has launched a dramatic educational demonstration project on cancer nursing for nursing home staff. Special emphasis is on colostomy irrigation, care of the laryngectomized patient, care of an ileal bladder, and emergency nursing. To achieve maximum application of this plan, a cadre of nurses is being trained by the Society to conduct cancer nursing courses in nursing homes throughout the nation.

This endeavor has been warmly endorsed by the American Nurses Association and other professional organizations. We feel sure that such a program, bringing skilled nursing care to the bedside of the cancer patient, will be enthusiastically received by the medical profession.

AMERICAN CANCER SOCIETY 





Indications: Tofrânîl is recommended for the treatment of depressive states of diverse psychopathology.
Contraindications: The concomitant use of Tofrânîl and monoamine oxidase inhibiting (M.A.O.I.) compounds is contraindicated. Hyperpyretic crises or severe convulsive seizures may occur. Potentiation of adverse effects can be serious or even fatal. An interval of at least 7 days after M.A.O.I. therapy has been discontinued should be allowed before Tofrânîl may be substituted. Initial Tofrânîl dosage should be low, increases should be gradual, and the patient's progress should be carefully observed.
Warning: Clinical reports have suggested that there may be a risk of teratogenesis associated with the use of this compound during the first trimester of pregnancy. Unless, in the opinion of the prescribing physician, the potential benefits outweigh the

possible risks, Tofrânîl should not be used during the first trimester of pregnancy.
Cardiovascular complications, including myocardial infarction and arrhythmias, have occasionally occurred in susceptible individuals. Patients with cardiovascular disease should be given the drug only under careful observation and in low dosage.
Precautions: Since suicide is always a possibility in severely depressed patients and one which may persist until significant remission occurs, such patients should be carefully supervised during early treatment with Tofrânîl. Some severely depressed patients may also require hospitalization and/or concomitant electroconvulsive therapy.
Because of its anticholinergic effect, caution should be observed in prescribing Tofrânîl for patients with increased intraocular pressure.

In rare instances, transient cardiac arrhythmias have occurred in hyperthyroid patients and in patients receiving thyroid medication when Tofrânîl was added to the regimen. Imipramine may block the pharmacologic activity of guanethidine and other related adrenergic neuron-blocking agents.
The drug is not recommended at the present time in patients under 12 years of age.
Adverse Reactions: Dryness of the mouth, tachycardia, constipation, disturbances of accommodation, sweating, dizziness, weight gain, urinary frequency or retention, nausea and vomiting, peripheral neuritis, mild parkinson-like syndrome, tremors, rare cases of falling in elderly patients, confusional states (with such symptoms as hallucinations and disorientation), activation of psychosis in schizophrenics and agitation (including

When a milestone in life is marred by depression...



Often in the mind of the lonely, widowed, depression-prone individual, she's not gaining a daughter...she's losing a son. The occasion may be marred by such symptoms of depression as feelings of sadness, incapacity, helplessness and hopelessness.

In about 3 out of 4 cases, Tofrānil relieves symptoms of primary depression.

As maintenance therapy in primary depressive illness, it helps prevent relapse.

Although toxic reactions severe enough to require discontinuation of Tofrānil are uncommon, in patients with cardiovascular disease, thyroid disorders, increased intra-ocular pressure, or in those receiving anticholinergics (including antiparkinsonism agents), the special precautions listed in the Prescribing Information should be carefully observed. The use of Tofrānil in patients receiving M.A.O.I.'s is contraindicated.

Tofrānil[®] imipramine
hydrochloride
Geigy

g hypomanic and manic episodes)
which may require dosage reduction
and/or addition of a tranquilizer or
temporary discontinuation of the drug,
ileptiform seizures, orthostatic
hypotension and substantial blood
pressure fall in hypertensive patients,
purpura, transient jaundice, bone mar-
row depression including agranulocy-
sis, sensitization and skin rash
including photosensitization, eosino-
philia, and mild withdrawal symptoms
on sudden discontinuation after pro-
longed treatment with high doses.
Occasional hormonal effects (im-
potence, decreased libido, and estro-
genic effects) may be observed.
Atropine-like effects may be more
pronounced (e.g. paralytic ileus) in
susceptible patients and in those
receiving anticholinergic agents (includ-
ing antiparkinsonism drugs).
Outpatient Adult Dosage: Initially,
25 mg. daily, increased, if necessary,

to 150 or 200 mg. Maintenance dosage
may be lower, 50 to 150 mg. daily, if
possible.

Geriatric and Adolescent Dosage:
Initially, 30 or 40 mg. daily, which may
be increased according to response
and tolerance. It is usually unneces-
sary to exceed 100 mg. daily.
A lag in therapeutic response, lasting
from a few days to a few weeks,
should be expected. When dosage
recommendations are already being
followed, increasing the dosage does
not normally shorten this latency
period and may increase the inci-
dence of adverse reactions.

Availability: Tofrānil: Round tablets of
25 and 50 mg.; triangular tablets of
10 mg. for geriatric and adolescent
use; and ampuls, each containing
25 mg. in 2 cc. for I.M. administration.
(B)46-850-C

**For complete details, please refer to
the full Prescribing Information.**



Geigy Pharmaceuticals
Division of Geigy Chemical Corporation
Ardsley, New York 10502

Some U.R.I. patients are more miserable than others.

That's why we make Novahistine® in two different tablet formulations.

And let you control the dosage.

With Novahistine LP tablets and Novahistine Singlet™ tablets you have the range and flexibility of decongestant dosage that lets you prescribe for the needs of the individual patient.

Novahistine LP tablets are most useful for relief of nasal congestion in patients without pain or fever.

Novahistine Singlet tablets, which provide analgesic-antipyretic effect, as well as decongestant action, are indicated for upper respiratory infections accompanied by pain, aches and fever.

Whether you prescribe Novahistine LP or Novahistine Singlet, a total daily dose of 3 or 4 tablets will usually provide effective, continuous relief.

Use cautiously in patients with severe hypertension, diabetes mellitus, hyperthyroidism or urinary retention. Caution ambulatory patients that drowsiness may result.

Each Novahistine LP tablet contains phenylephrine hydrochloride, 25 mg.; and chlorpheniramine maleate, 4 mg.

Each Novahistine Singlet tablet contains phenylephrine hydrochloride, 40 mg.; chlorpheniramine maleate, 8 mg.; and acetaminophen, 500 mg.



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*“Upper respiratory infection! I thought everything
was a ‘virus’ these days?”*

**in moderate hypertension and
poorly controlled mild hypertension**
(when diuretics or sedatives are inadequate, for example)



When your patients expect a lot...
 like relief from hypertensive symptoms
 (headache, fatigue, nervousness, palpitation or insomnia, for example)
 like an up-to-date, once-a-day dosage schedule
 (a schedule not unlike timed-release medication, for example)
 like a daily dose of medication for peanuts
 (at 10¢ a tablet, for example)
 like generally well-tolerated therapy
 (as described in the package insert, for example)

...give them a little
 (one tablet daily)

Regroton®
 chlorthalidone 50 mg., reserpine 0.25 mg.

Indications: Hypertension. **Contraindications:** History of mental depression, hypersensitivity, and most cases of severe renal or hepatic diseases. **Warning:** With the administration of enteric-coated potassium supplements, which should be used only when adequate dietary supplementation is not practical, the possibility of small-bowel lesions (obstruction, hemorrhage, and perforation) should be kept in mind. Surgery for these lesions has frequently been required and deaths have occurred. Discontinue coated potassium-containing formulations immediately if abdominal pain, distention, nausea, vomiting, or gastrointestinal bleeding occur. Discontinue one week before electroshock therapy, and if depression or peptic ulcer occurs. *Use in pregnancy:* Regroton should be used in pregnant patients or in women of childbearing potential only when, in the judgment of a physician, its use is deemed essential to the welfare of the patients; adverse reactions (thrombocytopenia, hyperbilirubinemia, altered carbohydrate metabolism, etc.) are potential problems in the newborn.

Precautions: Antihypertensive therapy with Regroton should always be initiated cautiously in postsympathectomy patients and in patients receiving ganglionic blocking agents, other potent antihypertensive drugs, or curare. Reduce dosage of concomitant antihypertensive agents by at least one-half. To avoid hypotension during surgery, discontinue Regroton therapy two weeks prior to elective surgical procedures. In emergency surgery, use, if needed, anticholinergic or adrenergic drugs or other supportive measures as indicated. Because of the possibility of progression of renal damage, periodic kidney function tests are indicated. Discontinue if the BUN rises or liver dysfunction is aggravated. Hepatic coma may be precipitated. Electrolyte imbalance, sodium and/or potassium depletion may occur. If potassium depletion should occur during therapy, Regroton should be discontinued and potassium supplements given, provided the

patient does not have marked oliguria. Take particular care in cirrhosis or severe ischemic heart disease and in patients receiving corticosteroids, ACTH, or digitalis. Salt restriction is not recommended. Use cautiously in patients with ulcerative colitis or gallstones (biliary colic may be precipitated). Bronchial asthma may occur in susceptible patients. **Adverse Reactions:** The drug is generally well tolerated. The most frequent side effects are nausea, gastric irritation, vomiting, diarrhea, constipation, muscle cramps, headache, dizziness and acute gout. Other potential side effects include angina pectoris, anxiety, depression, bradycardia and ectopic cardiac rhythms (especially when used with digitalis), drowsiness, dull sensorium, hyperglycemia and glycosuria, hyperuricemia, lassitude, restlessness, transient myopia, impotence or dysuria, orthostatic hypotension which may be potentiated when chlorthalidone is combined with alcohol, barbiturates or narcotics, leukopenia, aplastic anemia, skin rashes, thrombocytopenia, agranulocytosis, nasal stuffiness, increased gastric secretions, nightmare, purpura, urticaria, ecchymosis, weakness, uveitis, optic atrophy and glaucoma, and pruritus. Eruptions and/or flushing of the skin, a reversible paralysis agitans-like syndrome, blurred vision, conjunctival injection, increased susceptibility to colds, dyspnea, weight gain, decreased libido, dryness of the mouth, deafness, anorexia, and pancreatitis when epigastric pain or unexplained G.I. symptoms develop after prolonged administration. Jaundice, xanthopsia, paresthesia, photosensitization and necrotizing angiitis are possible. **Average Dosage:** One tablet daily with breakfast. **Availability:** Pink, single-scored tablets in bottles of 100 and 1000. (B) 46-600-B
 For details, see complete Prescribing Information.

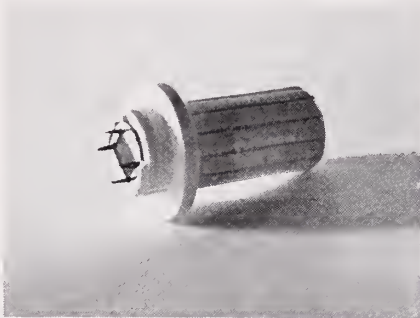


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Geigy

To fight TB- find it first!

Make tuberculin testing routine
with every physical examination.



TUBERCULIN_(Rosenthal) TINE TEST

Side effects are possible but rare: vesiculation, ulceration, or necrosis at test site. Contraindications: none, but use with caution in active tuberculosis. Available in 5's and 25's.



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“The inconvenience of a cold”

For a cold, NTZ® Nasal Spray provides rapid relief of all symptoms. Relief starts with the first spray which opens the inferior part of the common meatus. A second spray, a few minutes later, will shrink the turbinates to provide sinus drainage and ventilation. Dosage should be repeated every three or four hours as needed, for temporary relief of symptoms. NTZ is well tolerated and overdosage should be avoided.

For sinusitis deterrent, NTZ Nasal Spray can be used to keep the nasal passages open during a cold to help prevent development of acute sinusitis—or to help prevent an acute condition from becoming chronic.

Applied: NTZ Nasal Spray, plastic squeeze bottles of 30 ml. (1 fl. oz.) with dropper.

NTZ is more than a simple vasoconstrictor. It contains **Neo-Synephrine®** (brand of phenylephrine)

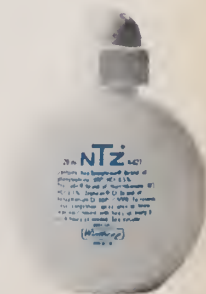
HCl 0.5 per cent, the major component, virtually synonymous with fast, efficient but gentle nasal vasoconstriction.

Thenfadin® (brand of thenyldiamine) HCl 0.1 per cent, topical antihistamine for reduction of rhinorrhea, sneezing or itching. It combats the allergic reactions that may occur in colds or sinusitis.

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Winthrop



Valium[®] (diazepam)

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for the
coronary
patient...**

When oppressive feelings and psychic tensions are severe and cooperation with the physician poor, it may be helpful to add adjunctive Valium (diazepam), 10 mg or 5 mg t.i.d., to the coronary patient's regimen. Valium (diazepam) helps to promote the needed relaxation that the patient requires to make him less preoccupied with his condition and more inclined to cooperate in, and benefit from, the total therapeutic program. Valium (diazepam) may be administered in the presence of secondary depressive symptoms.

in the hospital...
(5 mg or 10 mg t.i.d.)



convalescing...

(2 mg or 5 mg t.i.d.)

The heart patient who leaves the hospital to enter a period of slow restorative treatment is often forced to make emotionally difficult adjustments. The resulting stress of this period may again cause psychic tension to mount to potentially harmful levels. To augment your reassurance and the emotional support of his family, a 2 mg or 5 mg t.i.d. regimen of Valium (diazepam) can reduce psychic tension and thereby help the patient to accept necessary restrictions more calmly, and to adjust to his illness more realistically.

Getting back to work presents additional stresses for the cardiac patient. There are often anxiety-producing features in the job which can be more significant than the physical or intellectual demands of the work. Valium (diazepam), 2 mg or 5 mg t.i.d., may be a useful adjunct to reduce over-reaction to these stresses and thus help the patient to face job situations more calmly and rationally.

back at work...

(2 mg or 5 mg t.i.d.)



Valium® (diazepam)

to help relieve psychic tension

and for the patient with tension-induced sleeplessness, remember the value of an extra tablet at bedtime

Before prescribing, please consult complete product information, a summary of which follows:

Indications: Tension and anxiety states, moderate to severe psychoneurotic states with anxiety, apprehension or agitation alone or with depressive symptoms; somatic complaints which are concomitants of emotional factors; acute agitation due to alcohol withdrawal; muscle spasm associated with cerebral palsy and athetosis.

Contraindications: Infants, patients with history of convulsive disorders, glaucoma or known hypersensitivity to drug.

Warning: Not of value in the treatment of psychotic patients, and should not be employed in lieu of appropriate treatment.

Precautions: Limit dosage to smallest effective amount in elderly or debilitated patients (not more than 1 mg, one or two times daily initially) to preclude ataxia or oversedation, increasing gradually as needed or tolerated. As is true of all CNS-acting drugs, until correct maintenance dosage is established, advise patients against possibly hazardous procedures requiring complete mental alertness or physical coordination. Driving during therapy not recommended. In general, concurrent use with other psychotropic agents is not recommended. If such combination therapy is used, carefully consider individual pharmacologic effects—particularly with known compounds which may potentiate action of Valium (diazepam), such as phenothiazines, barbiturates, MAO inhibitors and other antidepressants. Advise patients against simultaneous ingestion of alcohol or other CNS depressants. Safe use in pregnancy not established. Employ usual precautions in treatment of anxiety states with evidence of impending depression; suicidal tendencies may be present and protective measures necessary. Observe usual precautions in impaired renal or hepatic function. Periodic blood counts and liver function tests advisable in long-term use. Cease therapy gradually.

Side Effects: Side effects (usually dose-related) are fatigue, drowsiness and ataxia. Also reported: mild nausea, dizziness, blurred vision, diplopia, headache, incontinence, slurred speech, tremor and skin rash; paradoxical reactions (excitement, depression, stimulation, sleep disturbances, acute hyperexcited states, hallucinations); changes in EEG patterns during and after drug treatment. Abrupt cessation after prolonged overdosage may produce withdrawal symptoms (convulsions, tremor, abdominal and muscle cramps, vomiting, sweating) similar to those seen with barbiturates, meprobamate and chlorthalidone HCl.

Dosage — Adults: Mild to moderate psychoneurotic reactions, 2 to 5 mg b.i.d. or t.i.d.; severe psychoneurotic reactions, 5 to 10 mg t.i.d. or q.i.d.; alcoholism, 10 mg t.i.d. or q.i.d. in first 24 hours, then 5 mg t.i.d. or q.i.d. as needed; muscle spasm with cerebral palsy or athetosis, 2 to 10 mg t.i.d. or q.i.d.

Geriatric patients: 1 or 2 mg/day initially, increase gradually as needed and tolerated. (See Precautions.)

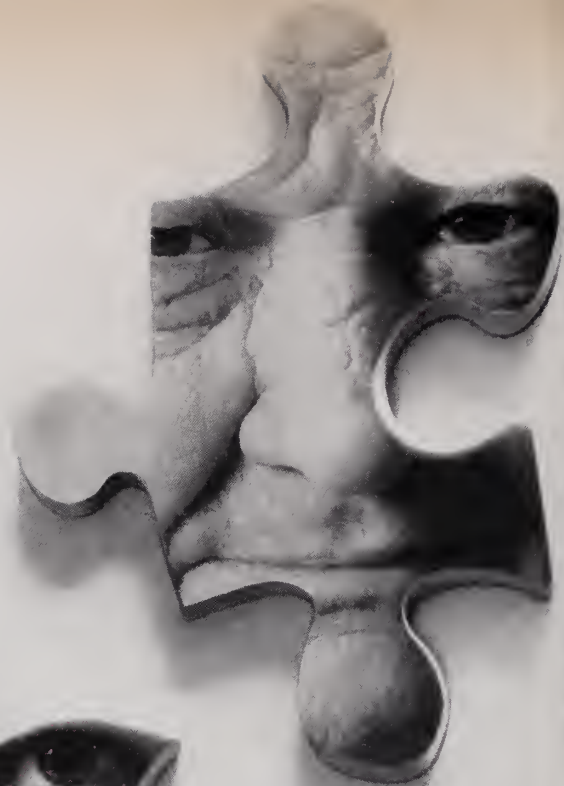
Supplied: Valium® (diazepam) Tablets, 2 mg, 5 mg and 10 mg; bottles of 50 and 500.



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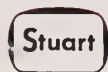
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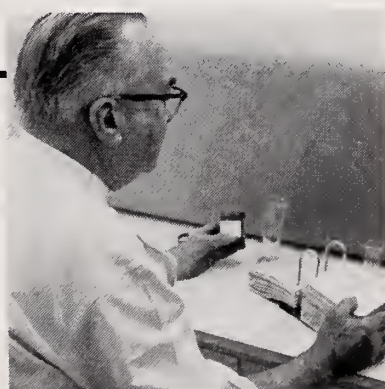
References: 1. Hoon, J. R.: Arch. Surg. 93:467 (Sept.) 1966.
2. Danhof, I. E., Personal communication.



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March 25-28: Southeastern Surgical Congress. Sheraton-Park Hotel, Washington. Address: Dr. A. H. Letton, Executive Secretary, 840 Boulevard, N.E., Atlanta, Ga. 30312.

March 29-31: American Society of Internal Medicine. Hotel Statler, Boston. Address: Mr. Edward E. Daleske, Assistant Executive Director, 3410 Geary Blvd., San Francisco, Calif. 94118.

April 1-5: American College of Physicians. Sheraton-Boston Hotel, Boston. Address: Dr. Edward C. Rosenow, Jr., Executive Director, 4200 Pine Street, Philadelphia, Pa. 19104.

April 1-5: Gill Memorial Eye, Ear and Throat Hospital Spring Congress. Roanoke, Va. Address: Dr. H. L. Bell, 707-711 South Jefferson Street, Roanoke, Va. 24008.

April 11-13: American Association for Cancer Research. Haddon Hall, Atlantic City, N.J. Address: Mr. Hugh J. Creech, Secretary-Treasurer, 7701 Burholme Avenue, Philadelphia, Pa. 19111.

April 15-20: American Physiological Society. Ambassador Hotel, Atlantic City, N.J. Address: Dr. Ray G. Daggs, Executive Secretary-Treasurer, 9650 Rockville Pike, Bethesda, Md. 20014.

April 15-20: American Society for Experimental Pathology. Atlantic City, N.J. Address: Dr. Ralph E. Knutti, Executive Officer, 9650 Rockville Pike, Bethesda, Md. 20014.

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April 22-27: American Academy of Neurology. Pick-Congress Hotel, Chicago. Address: Mr. Stanley A. Nelson, Executive Director, 4005 West 65th Street, Minneapolis, Minn. 55435.

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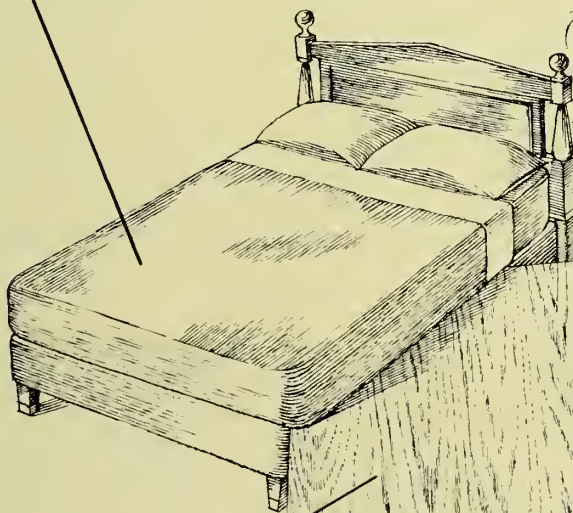


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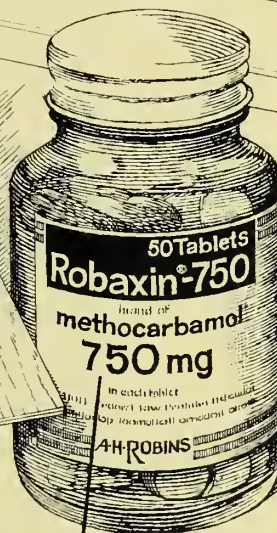
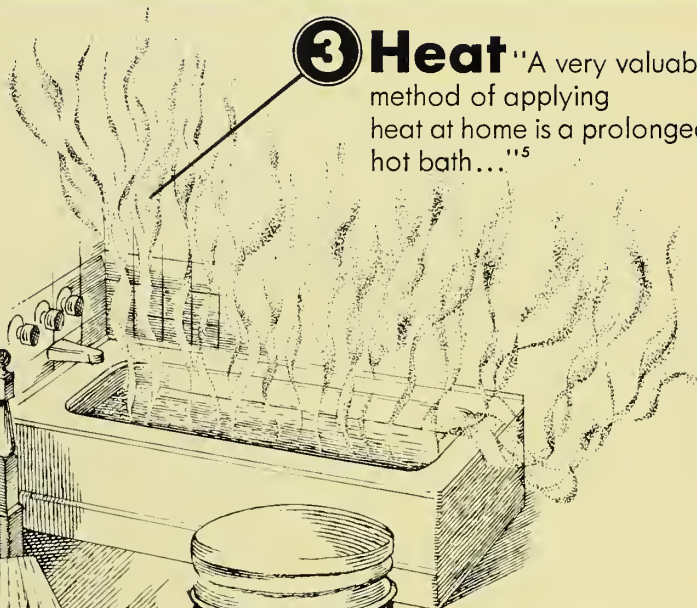
The low back pain that is most frequently seen in general practice is mechanical in nature, i.e., postural back pain, joint dysfunction and acute back strain.^{1,2} For this type of discomfort, a conservative regimen is usually sufficient to relieve aches and pains, and to help keep the patient functioning. Components of this basic program include:

1 Bed "If the patient is in the pain-spasm-cycle...there is no alternative or substitute for absolute bed rest..."³



2 Board "Boards should be ordered under the mattress...these boards act by immobilizing the spine..."⁴

3 Heat "A very valuable method of applying heat at home is a prolonged hot bath..."⁵

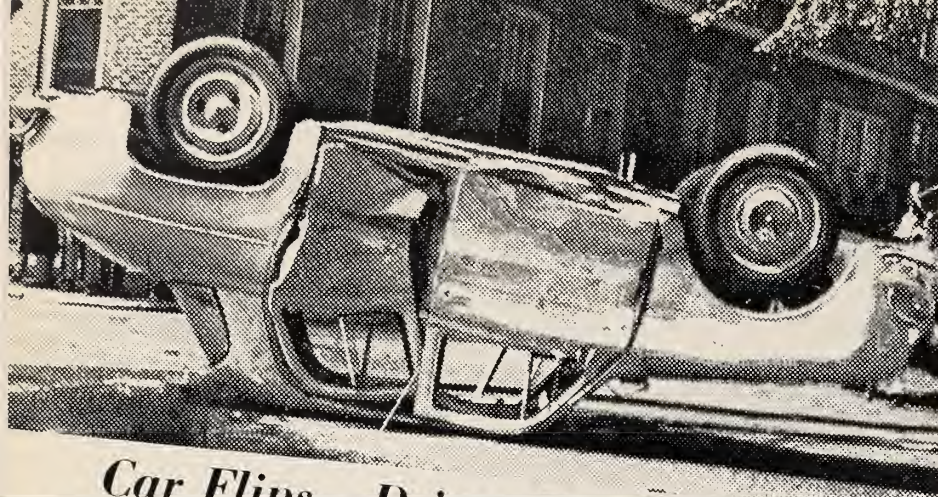


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References: (1). Godfrey, C.M.: Applied Therop. 8:950, 1966. (2). Gottschalk, L.A.: GP 33:91, 1966. (3). Rowe, M.L.: J. Occup. Med. 2:219, 1960. (4). Cozen, L.: South Dakota J. Med. 18:26, 1965. (5). Soto-Hall, R.: Med. Sc. 14:23, 1963. (6). Weiss, M. and Weiss, S.: J. Am. Osteopath. A. 62:142, 1962. (7). Feuer, S.G., et al.: New York J. Med. 62:1985, 1962.

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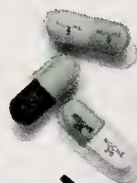


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ataxia or oversedation, increasing gradually as needed and tolerated. Not recommended in children under six. Though generally not recommended, if combination therapy with other psychotropics seems indicated, carefully consider individual pharmacologic effects, particularly in use of potentiating drugs such as MAO inhibitors and phenothiazines. Observe usual precautions in presence of impaired renal or hepatic function. Paradoxical reactions (e.g., excitement, stimulation and acute rage) have been reported in psychiatric patients and hyperactive aggressive children. Employ usual precautions in treatment of anxiety states with evidence of impending depression; suicidal tendencies may be present and protective measures necessary. Variable effects on blood coagulation have been reported very rarely in patients receiving the drug and oral anticoagulants; causal relationship has not been established clinically.

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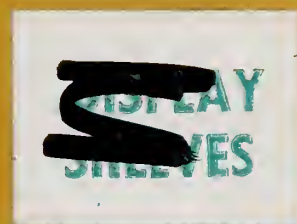
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April
1968



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Treatment of Fat Embolism

CAPT. T. H. WILSON, JR.

Linitis Plastica and Situs Inversus

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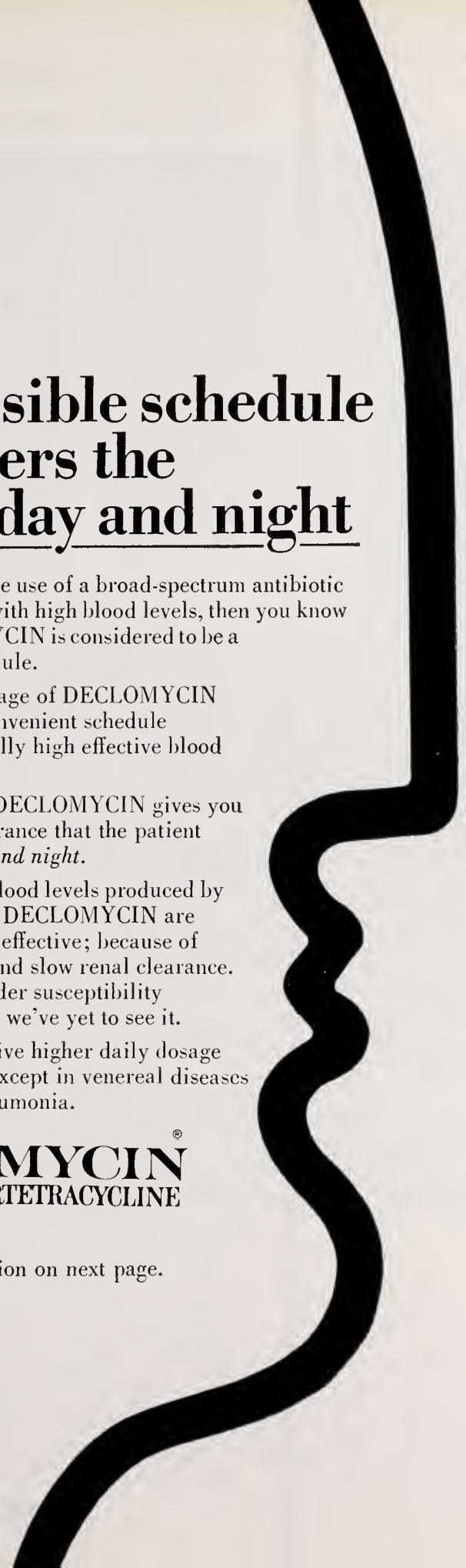
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Precautions—Overgrowth of nonsusceptible organisms may occur. Constant observation is essential. If new infections appear, appropriate measures should be taken. In infants, increased intracranial pressure with bulging fontanels has been observed. All signs and symptoms have disappeared rapidly upon cessation of treatment.

Side Effects—Gastrointestinal system—anorexia, nausea, vomiting, diarrhea, stomatitis, glossitis, enterocolitis, pruritus ani. Skin—maculopapular and erythematous rashes. A rare case of exfoliative dermatitis has been reported. Photosensitivity; onycholysis and discoloration of the nails (rare). Kidney—rise in BUN, apparently dose related. Transient increase in urinary output, sometimes accompanied by thirst (rare). Hypersensitivity reactions—urticaria, angioneurotic edema, anaphylaxis. Teeth—dental staining (yellow-brown) in children of mothers given this drug during the latter half of pregnancy, and in children given the drug during the neonatal period, infancy and early childhood. Enamel hypoplasia has been seen in a few children. If adverse reaction or idiosyncrasy occurs discontinue medication and institute appropriate therapy.

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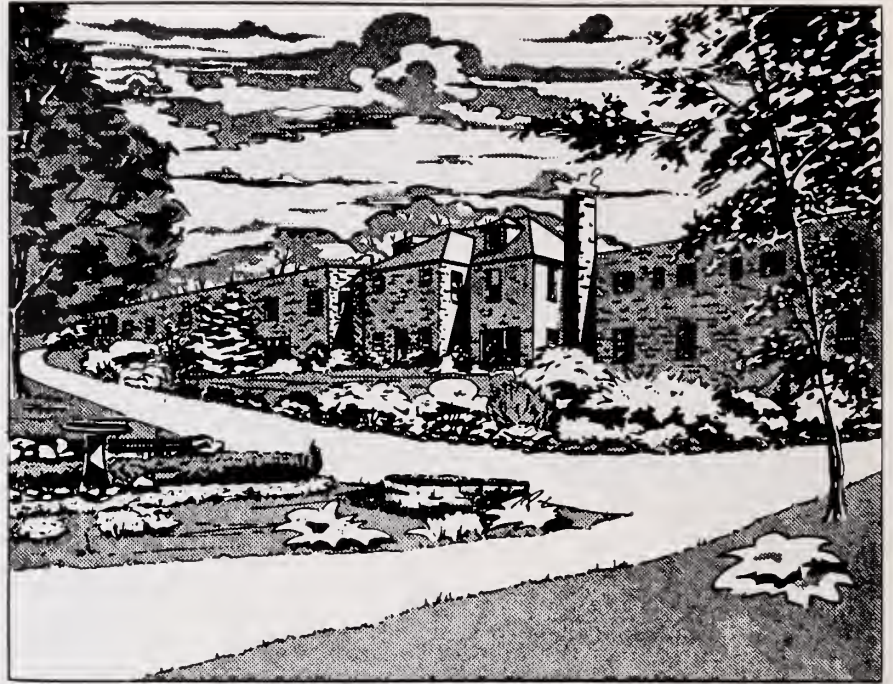
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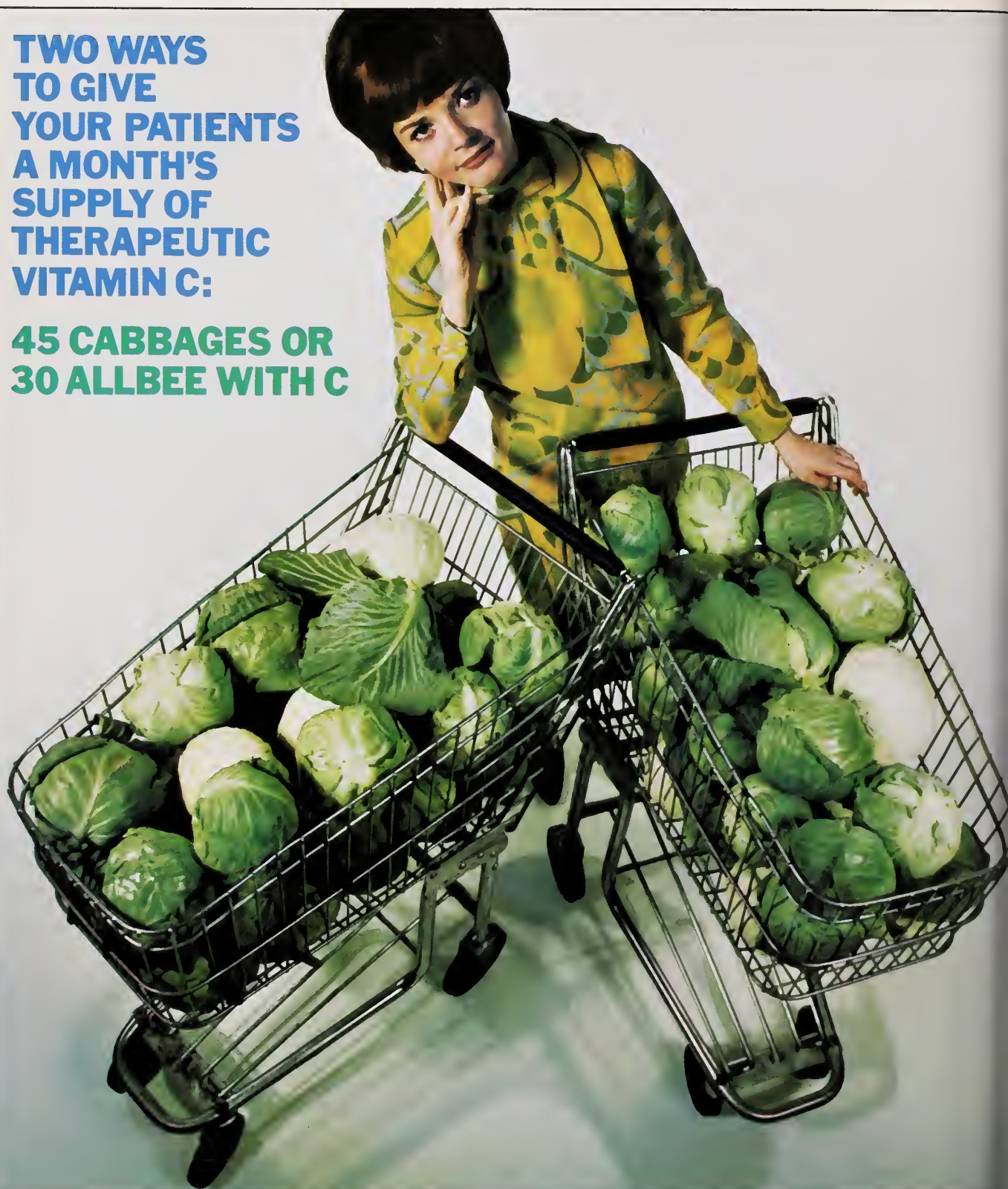
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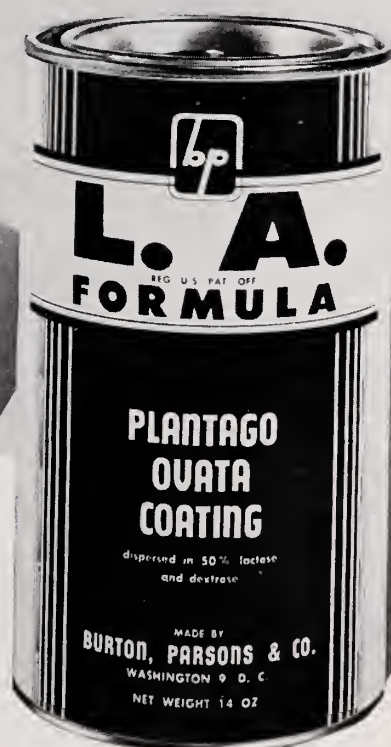


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803446

*Please see
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Warnings As with other forms of sulfonamide therapy, use only after critical appraisal in patients with liver or kidney damage, urinary obstruction, or blood dyscrasias. Deaths have been reported from hypersensitivity reactions and blood dyscrasias following use of sulfonamides. Perform blood counts and liver and kidney function tests when used intermittently or for long periods.

Precautions, Side Effects Use sulfonamides with caution in patients with a history of allergy, including asthma. Mild allergic reactions (such as urticaria and other skin rashes) may occur. Serious allergic reactions have been extremely infrequent; if encountered appropriate countermeasures (e.g. epinephrine, steroids, etc.) should be administered and the drug withdrawn. Assure adequate fluid intake to prevent crystalluria and institute alkali therapy if indicated. In prolonged therapy, or when high dosage is used, maintain an alkaline urine. If oliguria occurs, discontinue therapy. Occasionally mild abdominal discomfort, nausea or vomiting may occur with erythromycin; generally improved by reduction of dosage.

If overgrowth of nonsusceptible organism occurs, withdraw the drug and institute appropriate treatment.

Adverse Reactions Sulfonamide therapy may be associated with headache, nausea, vomiting, diarrhea, hepatitis, pancreatitis, blood dyscrasias, neuropathy, drug fever, skin rash, urticaria, injection of the conjunctiva and sclera, petechiae, purpura, hematuria and crystalluria.

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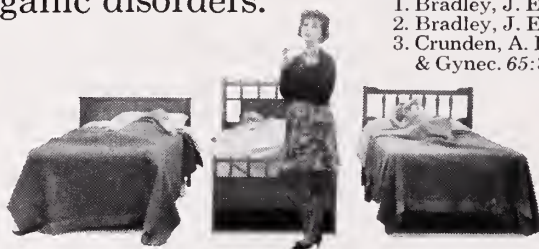
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2. Bradley, J. E.: Mod. Med. 20:71 (Oct. 15) 1952.
3. Crunden, A. B., Jr., and Davis, W. A.: Am. J. Obst. & Gynec. 65:311 (Feb.) 1953.



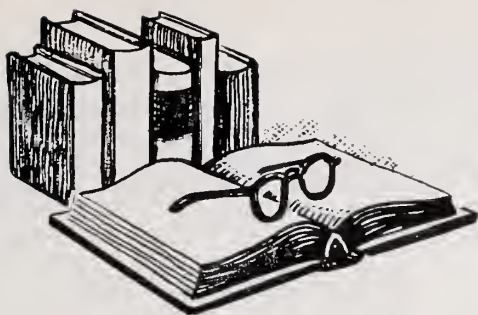
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Book Reviews

Atlas of Infant Surgery. J. EUGENE LEWIS, JR., M.D. Price, \$21.00. Pp. 258, with 87 plates of illustrations by Ramona Morgan, B.F.A. St. Louis: Mosby, 1967.

Dr. Lewis states in his preface, "The bulk of infant surgery is performed by surgeons who have not had an opportunity to accumulate wide experience in the surgical management of the infants because of the relative rarity of many of the abnormalities." His book is aimed primarily at this group of surgeons and accomplishes its purpose admirably, in this reviewer's mind.

The introduction contains a wealth of sound information and homely tips for the management of the pediatric surgical patient. The topics handled in the 19 chapters range from "Lesions of the Neck" to "Sacrococcygeal Teratoma" and are well covered. The subject material is clearly and concisely stated in a pleasing type which aids in gaining information quickly. Almost each topic is prefaced by a short text which is packed with pertinent information in almost every sentence. The illustrations are clear, but perhaps so simplified they might lead a less experienced pediatric surgeon into thinking the operation is more elementary than it actually is.

Most criticisms are minor. There is a lack of subtitles in the text of each chapter which does not permit the reader to go quickly to the subject in which he is interested but rather to read carefully through the entire text. The titles of the operations over the illustrations are not readily noticeable and would, perhaps, be more obvious had they been placed on the opposite page above the instructions accompanying each illustration.

Dr. Lewis' recommended procedures are well accepted and have been proven by the test of time. Here, however, is the only major criticism of the book. Because of the pace of scientific achievements and constantly improving surgical techniques in this rapidly increasing body of knowledge, some of the described operations, or some aspects of them, although still serviceable, are somewhat outdated. In Hirschsprung's disease, for example, there are no illustrations of either the Duhamel or Soave techniques. Again, the use of the newer prosthetic materials in omphalocele is not covered. The reader should then utilize the good bibliography to review more extensively the operative possibilities in any given case. Nevertheless, the surgeon who follows the principles and standards set forth in this text will carry out adequate and time-honored surgery and should obtain satisfactory results.

JOHN R. LILLY, M.D.

Principles of Nuclear Medicine. Edited by HENRY N. WAGNER, JR., M.D. Price, \$27.50. Pp. 896, with 175 illustrations. Philadelphia: Saunders, 1968.

This is an excellent book edited by an authority in this field with the able assistance of 34 outstanding contributors in the discipline of nuclear medicine. The concept of division of the material into chapters on basic essentials of mathematics, basic physics, measurement of radioactivity and radiopharmaceuticals offers this book as a text for the student as well as a reference for the specialist. The chapter on the mathematics of nuclear medicine is advanced, perhaps too much so for the average radiologist or interested physician.

The chapters following the basic fundamentals deal with the clinical applications of nuclear medicine. The section on thyroid disease is outstanding. The remainder of the chapters on clinical application include metabolic diseases, blood, the lung, the circulation, the gastrointestinal tract, the kidney, the nervous system, and the skeleton.

The final chapters on radiation injury, radiation dosimetry, radiation safety, and the technical details on the more common procedures are complete and detailed.

The references at the end of each chapter are more than adequate, especially the one on "Measurement of Radioactivity," which is divided into subsections relating to specific components in addition to the general references on the subject.

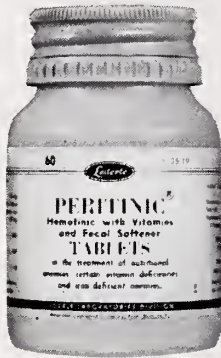
WILLIAM S. COLE, M.D.

Ciba Foundation Colloquia on Endocrinology, Volume 16: Endocrinology of the Testis. Edited by G. E. W. WOLSTENHOLME, O.B.E., M.A., F.R.C.P., F.I.Biol., and MAEVE O'CONNOR, B.A. Price, \$12.50. Pp. 331, with 93 illustrations. Boston: Little, 1967.

This volume, the latest in the Ciba Foundation Colloquia, represents the result of an international symposium which occurred in May of 1966. Because the contributors, with 1 or 2 exceptions, are highly oriented toward the experimental and research aspects of endocrinology, this volume will be of interest only to others highly specialized in the theoretical aspects of the male hormones. For those who are more clinically oriented, I do not think that this book would be of interest, although there is an interesting paper by Dr. Mortimer Lipsett and his associates on the role of the testis in estrogen production.

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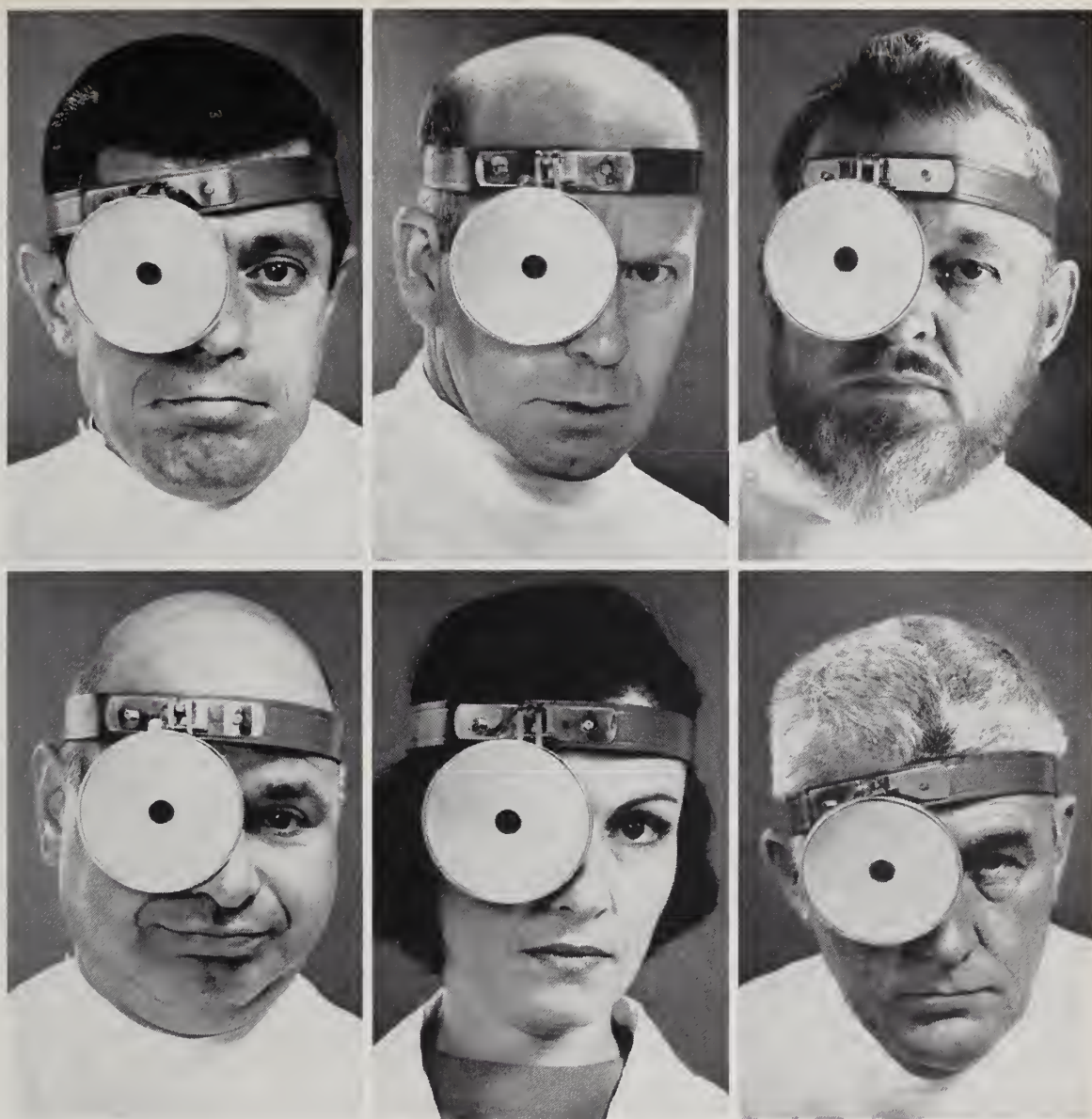
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*See last page
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Warnings: USE IN PREGNANCY: Safety for use during pregnancy or lactation has not been established; therefore, it should be used in pregnant patients or women of child-bearing age only when the physician judges its use essential to the patient's welfare.

Precautions: Keep out of reach of children. Not recommended for patients 12 years old or less. Carefully supervise dose and amounts prescribed, especially for patients prone to overdose themselves. Excessive prolonged use of meprobamate may result in dependence or habituation in susceptible persons—as alcoholics, ex-addicts, severe psychoneurotics. Withdraw gradually after prolonged high dosage to avoid possibly severe withdrawal reactions including epileptiform seizures. Warn patients of possible reduced alcohol tolerance. If drowsiness, ataxia or visual disturbances (impairment of accommodation and visual acuity) occur, reduce dose. If symptoms persist, caution patients against operating machinery or driving. After meprobamate overdose, prompt sleep, reduction of blood pressure, pulse and respiratory rates to basal levels, and hyperventilation are reported. Give cautiously to patients with suicidal tendencies. Treat attempted suicide (has resulted in coma, shock, vasomotor and respiratory collapse and anuria) with immediate gastric lavage and appropriate supportive therapy (CNS stimulants and pressor amines as indicated).

Side Effects: Ethoheptazine and aspirin may occasionally cause nausea, vomiting, epigastric distress, and rarely dizziness. Overdosage may result in CNS depression (drowsiness and lightheadedness) or CNS stimulation and salicylate intoxication (requires induced vomiting or gastric lavage, specific parenteral electrolyte therapy for ketoacidosis and dehydration, and observation for hypoprothrombinemic hemorrhage [usually requires whole blood transfusions]). Meprobamate may cause drowsiness, ataxia and rarely allergic or idiosyncratic reactions. These reactions, sometimes severe, can develop in patients receiving only 1 to 4 doses who have had no previous contact with meprobamate. Mild reactions are characterized by urticarial or erythematous maculopapular rash. Acute non-thrombocytopenic purpura with petechiae, ecchymoses, peripheral edema and fever have been reported. If allergic reaction occurs, meprobamate should be stopped and not reinstituted. Severe reactions, observed very rarely, include angioneurotic edema, bronchial spasms, fever, fainting spells, hypotensive crises (1 fatal case), anaphylaxis, stomatitis and proctitis (1 case) and hyperthermia. Treat symptomatically such as with epinephrine, antihistamine and possibly hydrocortisone. A few cases of leucopenia, usually transient, have been reported following continuous use. Rarely, cases of aplastic anemia (1 fatal case), thrombocytopenic purpura, agranulocytosis, and hemolytic anemia have been reported; almost always, in the presence of known toxic agents.

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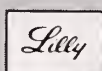
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THIS IS THE FIFTH of a fifth series of special numbers of the MEDICAL ANNALS, the scientific material for which is supplied by medical institutions and scientific organizations in the Washington Metropolitan Area. For the NATIONAL NAVAL MEDICAL CENTER NUMBER the Editorial Board is indebted to Captain George H. Tarr, Jr., MC, USN, Consulting Editor of the MEDICAL ANNALS, who secured the papers which appear in this issue. The opinions or assertions contained therein are the private ones of the writers and are not to be construed as official nor as reflecting the views of the Bureau of Medicine and Surgery of the Navy Department or the Naval Service at Large.

Live Mumps Virus Vaccine: Clinical Reactions and Serological Response in 615 Children

CAPTAIN A. M. MARGILETH, MC, USN (RET.), F.A.A.P., F.A.C.P.,* COMMANDER G. W. MELLA,
MC, USN, F.A.A.P.,† AND F. DI MOIA, M.D., PH.D., F.A.A.P.‡

IN 1966 Hilleman¹ reported the isolation and use of the Jeryl Lynn, B level strain of attenuated live mumps virus that successfully fulfilled all of the criteria for a safe and effective vaccine. Clinical surveys^{2, 3} since 1965 have documented an excellent antibody response of 97 to 98 per cent in initially seronegative children; these individuals have been protected against natural mumps infection with a 95 per cent efficacy as measured in a field evaluation⁴ over a period of 20 months.⁵

Many physicians and parents regard mumps as a harmless disease in children since complications tend to occur in older age-groups. Adults who have not had mumps are at some increased risk when their child contracts the disease. This often causes parental concern and raises the question of passive immunization for temporary protection.

* Formerly Chief of Pediatrics, United States Naval Hospital, National Naval Medical Center; presently Associate Professor of Pediatrics for George Washington University School of Medicine, Children's Hospital of the District of Columbia, 2125 13th Street, N.W., Washington, D.C. 20009.

† Assistant Chief of the Pediatric Service, United States Naval Hospital, National Naval Medical Center, Bethesda, Md. 20014.

‡ Medical Research Laboratory, Merck Sharp & Dohme, West Point, Pa. 19486.

Hyperimmune mumps gamma globulin is rarely indicated for susceptible children under 10 years of age. Various recommendations as to the need for gamma globulin are made for adults depending upon the physician's previous experience and the result of a mumps antigen skin test.

In November 1966 we commenced a study on military dependent children to define the clinical and serologic response to live mumps virus vaccine. To fully evaluate these variables we obtained as many pre- and postvaccine titers as possible. This paper documents the results of vaccination of 615 children with live attenuated mumps virus vaccine§ and further substantiates the effectiveness and safety of this vaccine.

Materials and Methods

Population. The study was carried out in the pediatric well-child clinics of the U. S. Naval Hospital, Bethesda, Maryland, from November 10, 1966 to September 30, 1967. Patients aged 10 months to 18 years of age were selected for administration of the live attenuated mumps virus vaccine on the basis of a history negative for mumps and no contraindication medically. Children with acute illness, chronic infections,

§ Produced by Merck Sharp & Dohme, West Point, Pa.

leukemia, and those who were receiving steroids, antimetabolites, or other live vaccines were not inoculated.

Children were alternatively selected to receive vaccine or to serve as unvaccinated controls. Approximately 4 weeks later the children who served initially as controls were given the vaccine and the children who were vaccinated originally were observed as controls for the second 28-day period.

Standard report forms were provided to the parents for recording temperature once daily at least and reactions, if any, during the 28-day postimmunization observation period. Similar documentation was requested for the 28-day control period. Hence, every child participated for a total of 56 or more days.

Pre- and 28-day postimmunization blood specimens were obtained from nearly all vaccine recipients. Parents were advised of the possible occurrence of fever and were instructed to treat any temperature of 102°F (39°C) or higher with liquids and antipyretic medication. They were encouraged to return to the clinic or call at any time for a medical evaluation of the child's condition.

Vaccine. Live attenuated mumps virus vaccine lots 231 and 41,004 were used. The development of this vaccine was reviewed recently by Stokes.⁶ The lyophilized vaccine was reconstituted with sterile diluent immediately before use. Each patient received 0.5 ml. of reconstituted vaccine administered subcutaneously. The titer of lot 231 was $10^{-3.75}/0.1$ ml. (grivet renal cell culture) and lot 41,004, $10^{-3.8}/0.1$ ml. (BS-C-1 tissue culture) when assayed.

Serology testing. All sera were tested for mumps

Results

The majority (83 per cent) of the children were between 1 and 13 years of age; 60 per cent were aged 1 to less than 7 years. Ninety-one per cent were tested serologically; 47 per cent were initially seropositive (preimmune) and 53 per cent seronegative (susceptible). In the latter group seroconversion³ (titer rise 2-fold or more) occurred in 95 per cent and was lowest (72 per cent) in the older age group (table 1). The majority of those children showing seroconversion developed antibody titer rises of 4-fold or greater.

TABLE 1: Seroconversion Following Live Mumps Vaccine Related to Patient Age and Immune Status

Age Group	No. Vaccinated	No. Sampled	No. Initially Seropositive	Initially Seronegative		
				Total No.	No. Responded	Per cent Seroconversion*
10 to 12 mos.	10	9	2	7	7	100
1 to 6.9 yrs.	364	318	103	215	202	94
7 to 12.9 yrs.	201	193	123	70	68	97
13 to 18 yrs.	40	40	33	7	5	72
TOTAL	615	560	261	299	282	95

* 2-fold rise or greater.

The percentage of children initially seropositive increased in the older groups. In spite of a preimmune (seropositive) status the majority of these children developed antibody titers of 4-fold or greater (table 2).

TABLE 2: Serologic Response Following Live Mumps Vaccine Related to Age and Titer Rise in Children Initially Seropositive

Age Group	No. Sampled	Seropositive		Neutralizing Antibody Response				Per cent 2-Fold or Over
		Total No.	Per cent	None	2-fold	4-fold	Over 4-fold	
10 to 12 mos.	9	2	22	1	—	1	—	50
1 to 6.9 yrs.	318	103	32	6	12	66	19	94
7 to 12.9 yrs.	193	123	64	6	23	72	22	95
13 to 18 yrs.	40	33	82	3	8	11	9	85
TOTAL	560	261	47	16	43	150	50	93

antibody by the serum neutralization procedure⁷ which was more sensitive than the hemagglutination-inhibition method² in the Merck Sharp & Dohme serology laboratory.

Fever (101°F and above) occurred in 13 per cent of those serotested; in those seronegative with conversion, 12 per cent; in those initially seropositive, 11 per cent, controls 12 per cent

(table 3). Fever was rarely over 103°F and was more frequent in the younger child. It is important to note that fever occurred with the same frequency in the controls and in those children initially seropositive (table 3). During the 28-day

status. Upper respiratory-tract infection was the most frequent complaint or diagnosis (33 per cent) followed by gastrointestinal complaints (7 per cent), mainly mild diarrhea or vomiting or both. These mild complaints were somewhat more fre-

TABLE 3: Incidence and Degree of Fever in Controls and Vaccinees Related to Immune Status Following Vaccination with Live Mumps Vaccine

Maximum Temperature F—oral	Total Controls*		Total Vaccinees*		Initially Seronegative That Converted		Initially Seropositive		Serologic Failures	
	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent
103-104.9.....	13	2	11	2	5	2	4	2	—	—
101-102.9.....	66	10	69	11	30	10	23	9	1	8
99-100.9.....	319	51	369	58	172	63	155	59	5	42
99 or less.....	231	37	183	29	70	25	80	30	6	50
TOTAL.....	629	100	632	100	277	100	262	100	12	100

* Includes 17 patients with acute parotitis.

postinoculation and control periods there was no marked difference in fever from one time period to another in the controls or vaccinees whether initially seronegative or seropositive. The duration of fever in all age groups was noted to be less than 24 hours in the majority of children. There was no fever beyond 72 hours. No attempt was made to correlate fever with illness or complaints since these were unremarkable and appeared with similar frequency in controls and vaccinees.

Complaints other than fever are noted in table 4 in both groups of vaccinees (45 per cent) and controls (41 per cent) in relation to their immune

status. Upper respiratory-tract infection was the most frequent complaint or diagnosis (33 per cent) followed by gastrointestinal complaints (7 per cent), mainly mild diarrhea or vomiting or both. These mild complaints were somewhat more frequent in the vaccinees, especially those initially seronegative. A review of the control cards showed more incomplete records compared to those cards completed during the postvaccination period. It is conceivable that complaint rates would have been as high in the control group if cards had been kept more carefully.

Minimal parotid swelling lasting 2 to 3 days occurred in 1 patient 7 days following vaccination; this patient was found to be seropositive (pre-immune). Seventeen patients developed acute infectious parotitis within 2 to 18 days following vaccination. In every case a known exposure to

TABLE 4: Primary Complaints or Diagnosis Recorded among Total Group of 635 Children Following Live Mumps Vaccine

Primary Complaint or Diagnosis	Total Group				Immune Status			
	Vaccinated		Controls		Initially Seronegative		Initially Seropositive	
	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent
No complaint.....	352	55	377	59	142	46	167	54
Respiratory disease.....	208	33	189	30	106	60	72	40
Otitis media*.....	10	—	20	—	4	50	4	50
Gastrointestinal.....	44	7	36	5	26	67	13	33
Cervical adenitis*.....	6	—	1	—	4	—	1	—
Irrelevant (no diagnosis).....	15	2	34	4	10	67	5	33
Parotid swelling†.....	20	3	15	2	17	90	2	10
Malaise*.....	14	—	4	—	8	—	3	—
Rash*‡.....	13	—	11	—	7	—	4	—
Headache*.....	17	—	8	—	7	—	8	—
TOTAL PATIENTS REPORTED ..	635		635		277		264	

* Counted in respiratory disease, per cent not given.

† Seventeen patients developed mumps following vaccine.

‡ Varicella: 3 vaccinees, 6 controls.

mumps had occurred within the previous 48 hours. Thus our attempt to abort mumps by active immunization was unsuccessful. Rashes in 10 cases were due to concomitant viral respiratory tract infections; 3 were due to varicella. No untoward local or general reaction occurred in the immediate postinoculation period, and no late complications have been reported. Many parents reported direct exposure to mumps several months after vaccination, and to date we are unaware of any failure of the vaccine. One patient known to be mildly sensitive to eggs was vaccinated without incident.

Discussion

Is there a need for active mumps immunization? In the majority of children mumps is a benign disease. However, time lost from school may be very important for certain children, especially the underachiever. If the rare complication of orchitis, pancreatitis, meningoencephalitis, or transverse myelitis occurs additional school days will be missed.

Even more devastating although rare is the possibility of permanent residua of nerve deafness, occasionally severe and bilateral, sterility following orchitis or oöphoritis, and myocarditis, or optic neuritis.⁶ When mumps exposure occurs, parental distress can be handled quickly by active immunization of susceptibles with live mumps vaccine (LMV). This will not protect those directly exposed, as was found in 17 of our patients who developed mumps within 2 to 18 days after the vaccine was given. Apparently the attenuated mumps virus does not produce antibodies as rapidly as live measles virus.⁸

As shown in previous studies,^{1, 2, 3} cross-infection did not occur in susceptible contacts in this study following inoculation of LMV in siblings. Protective antibody levels following mumps vaccination were obtained with a neutralizing antibody titer of 1:2 or greater in 95 to 97 per cent of children.⁶ Protection may occur with a titer of 1:1 and occasionally with a titer of less than 1:1.^{4, 6} Of the 615 children inoculated with LMV 53 per cent were susceptible with an overall conversion rate of 98 per cent; the younger age groups had the highest rate (table 1). As anticipated, the older children had a higher percentage of initial seropositive tests. Seven children over the age of 13 years were initially seronegative; 5 responded with excellent seroconversion. Davidson⁹ found a 95 per cent seroconversion rate in 19 of 20 adults vaccinated.

The parents' negative history for mumps was incorrect in 82 per cent of those aged 13 years or above, 64 per cent in those between 7 and 12.9 years, and 32 per cent in those between 1 and 6.9 years. The overall preimmune (seropositive) rate was 47 per cent (table 2). Weibel² reported a 75 per cent correct parental history in children under the age of 6 years. Since many individuals over 13 years of age have had subclinical mumps in the past, these persons on exposure to mumps should be skin-tested first with mumps skin-test antigen.* Based upon a negative skin test, inoculation with LMV could be done. An alternative approach to this problem would be to coadminister LMV and human immune globulin in the opposite arm to passively protect the person while active immunity developed. A recent study⁷ showed that simultaneous inoculation of human immune globulin in 50 or 100 units per pound of body weight did not affect the antibody response to live mumps vaccine.

The neutralizing antibody response in children initially seropositive was remarkably high, particularly in those with an antibody rise of 4-fold or greater (table 2). Whether inapparent mumps-virus infection occurs with viremia in these individuals remains to be determined. It was apparent in this study that fever occurred in 11 per cent of children initially seropositive following LMV (table 3). Fever (101–102.9°F) was more frequent in the younger age-groups, both seronegative and seropositive initially, and only lasted 24 to 48 hours. Both control and vaccinee groups (initially seronegative and seropositive) showed fever (12–13 per cent) and mild clinical reactions (41–45 per cent) with approximately the same frequency (tables 3 and 4). However, the parents were not as faithful in maintaining the control period cards as they were the postinoculation cards. In addition, the parents were anticipating some reaction in the 28-day postinoculation period as evidenced by more phone calls and detailed notes on many clinical record cards. There was no significant difference in fever or clinical reactions in any of the 4 postinoculation periods. Mild upper respiratory-tract infections and gastrointestinal complaints accounted for the majority of complaints, but none were serious.

Significant antibody levels have been maintained for at least 2 years,^{4, 5} and it is anticipated that a booster would not be required for 5 years or more based upon experience with LMV in Phila-

* Available from Eli Lilly and Company, Indianapolis, Ind.

delphia⁴ and in Russia.⁶ Only continued surveillance will answer the need for booster inoculations. Since maternal mumps antibody interference is lost somewhat earlier than measles antibody⁷ LMV might be scheduled before 12 months of age so that measles vaccine could be given by the age of 1 year. Both of these vaccines have been given simultaneously by jet-gun injection without evidence of interference and with adequate immunologic response to both antigens.⁷ The vaccine is stable for at least 1 year in dried form and for 8 hours at 4°C following rehydration.⁷

Indications for LMV were discussed recently at the annual meeting of the American Academy of Pediatrics in Washington, D.C.¹⁰ A panel on vaccines recommended the initial use of LMV in 3 groups which have not had clinical mumps: (1) adolescent and adult males with a negative past history of mumps, (2) boys entering adolescence, and (3) children in camps and closed institutions where there is a high risk of exposure. It would seem wise to include girls and military recruits in this list, and, if experience with the vaccine continues to confirm its safety, children with chronic illness and especially the school underachiever should be added. Live mumps vaccine has been licensed and is available to all physicians. If further studies reaffirm its efficacy and if immunity is long-lasting as with live measles vaccine,⁸ the physician and patient will accept mumps vaccine as another routine inoculation to prevent a potentially serious disease.

Summary

A clinical and serologic study in 615 children receiving live mumps virus vaccine has confirmed its safety, ability to produce a high seroconversion rate (over 95 per cent), and excellent serum levels of neutralizing antibody. Fever following LMV occurred in 13 per cent of children and was rarely over 103°F, lasting 24 hours in the majority of vaccinees. Clinical complaints (45 per cent) post-inoculation were unremarkable and may have been unrelated to LMV, since similar although less frequent complaints (41 per cent) occurred in the control groups. The practicability of administering LMV to a routine well-child clinic popu-

lation was demonstrated, and the stability of the vaccine in office practice was reaffirmed. Significant antibody titer rise also occurred in children who were seropositive initially, indicating excellent anamnestic response in preimmune individuals. This group also reported fever (11 per cent) and had minimal clinical complaints (46 per cent).

There was no cross infection to susceptible contacts. Protective efficacy on exposure to natural mumps was observed frequently during the 14-month period of the study. Live attenuated mumps virus vaccine has been licensed. As additional studies confirm its efficacy it should rapidly become accepted for routine use in susceptible children and young adults in order to prevent a potentially serious disease.

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Use of a Modified Activated Clotting Time of Blood

LT. COMMANDER C. E. KRILL, JR., MC, USNR,* AND COMMANDER R. B. MOQUIN, MC, USN†

RAPID 1-STAGE TECHNIQUES for assessing the coagulation mechanism of blood have been sought for many years. Most tests devised so far lack sensitivity, are too time-consuming, or demand trained personnel and special laboratory equipment not readily available. Thus they are hardly suitable as tools for management or diagnosis of clotting disorders at the bedside.

To fill this need attention has been directed recently to the use of the activated clotting time of whole blood.¹ In this test maximal contact activation is achieved by the addition of an inert diatomite to the test tube. The initial phases of the coagulation cascade are accelerated, and the time required for the formation of a fibrin clot is greatly shortened. A significant factor in the variability of clotting tests, such as the commonly used Lee-White coagulation time, thereby is obviated. Although this principle had been applied previously to coagulation tests of plasma, Hattersley^{2, 3} and Hoffman⁴ were the first to use whole blood.

into a 13 by 100 mm. test tube containing 30 mg. diatomite (celite). The tube was inverted once or twice and the stopwatch started. After 60 seconds had elapsed the test tube was inverted at 5-second intervals until clotting of the blood occurred. The end-point was the appearance time of an obvious, firm, solid clot. Test measurements were made at room temperature and were conducted by several testers (technicians and physicians).

ACT values by this technique were determined on blood from healthy subjects and a limited number of patients with congenital or acquired bleeding disorders. In the latter group were 6 patients with classic hemophilia (factor VIII deficiency). Test values for ACT were obtained in several of these patients during the time they were receiving replacement therapy; details of 2 such instances are cited.

Results

The ACT values of healthy subjects are listed in table 1. Results obtained in children did not

TABLE 1: Results of Modified Activated Clotting Time in Healthy Subjects

	Range	Mean	S.D.
108 children	2 min. to 4 min., 30 sec.	3 min., 13 sec.	35 sec.
77 adults	2 min. to 4 min., 20 sec.	3 min., 14 sec.	32 sec.

This paper reports our experience with the use of the activated coagulation time (ACT) of Hattersley with certain modifications designed for practicality and ease of testing.

Methods

Ten milliliters of blood was obtained from subjects by venipuncture with disposable needles and plastic syringes. Generally the first 8.5 ml. was used for other tests, while the last 1.5 ml. was put

differ significantly from those obtained in adults. The mean clotting time of all subjects was 3 minutes, 13 seconds. The standard deviation was 33 seconds; the 95 per cent range represented clotting times between 2 minutes 7 seconds and 4 minutes, 19 seconds. The coefficient of variation was 16 per cent.

Results obtained when tests were performed in duplicate and triplicate had remarkable constancy. Clotting times differed by more than 10 seconds in only a single instance; in that occurrence the difference in clotting times was 20 seconds. Constancy of clotting times was not observed, however, when blood from the same individual was tested on separate days. Although all values obtained in this experiment were within

* Hematologist, Department of Pediatrics, United States Naval Hospital, National Naval Medical Center, Bethesda, Md. 20014.

† Chief of Hematology and Chemotherapy, Department of Internal Medicine, United States Naval Hospital.

the normal range, clotting time differences were sometimes 45 or more seconds.

Varying the amount of diatomite from 5 mg. to 55 mg. caused no significant differences in observed clotting times.

Simultaneous Lee-White coagulation times were performed in 109 of the healthy subjects. Results varied from 9 minutes to 18½ minutes. There was no correlation of these values with the ACT results.

In the group of patients with bleeding disorders (table 2) ACT test results are compared with results obtained simultaneously with Lee-White tests and partial thromboplastin time tests. All of the patients with sex-linked factor VIII deficiency, moderate and severe, had abnormal ACT results. One of the 2 patients with von Willebrand's disease had an ACT of 4 minutes, 20 seconds, clearly within the normal range, while an ACT of 7½ minutes was obtained in the other patient. There was one patient with Christmas disease of mild severity. His factor IX concentration was 35 per cent; the ACT value was at the upper limit of normal at 4 minutes, 30 seconds. Not unexpectedly, the Lee-White coagulation times of the 5 patients with partial deficiencies of factors VIII or IX were well within the normal range.

assays, ACT's and Lee-White times were performed at intervals during the next 24 hours. Prior to transfusion the ACT was 13 minutes. When the replacement therapy had raised the factor VIII concentration to 28 per cent the ACT value was 4

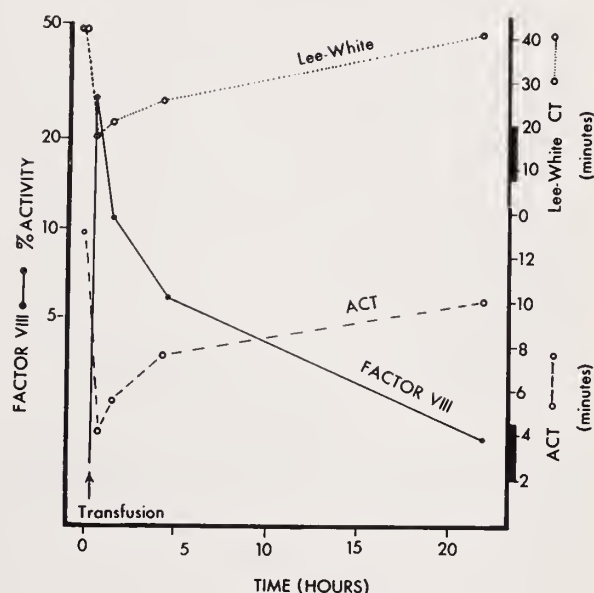


FIG. 1. Coagulation studies before and after transfusion of 4 cryoprecipitates into a 5-year-old hemophiliac.

TABLE 2: Results of Modified ACT and Other Clotting Tests in Patients with Bleeding Disorders

Patient	ACT	Lee-White	PTT
Normal values.....	2-4½ min.	9-20 min.	25-40 sec.
Hemophilia, F. VIII <1%.....	11 min., 30 sec.	>60 min.	102 sec.
Hemophilia, F. VIII <1%.....	12 min., 20 sec.	>60 min.	—
Hemophilia, F. VIII <1%.....	17 min.	>40 min.	—
Hemophilia, F. VIII <1%.....	14 min., 30 sec.	—	88.3 sec.
Hemophilia, F. VIII 7%.....	5 min., 30 sec.	14 min.	49.4 sec.
Hemophilia, F. VIII 13%.....	7 min., 30 sec.	18 min.	50.4 sec.
von Willebrand's, F. VIII 32%.....	4 min., 20 sec.	11 min., 30 sec.	59.0 sec.
von Willebrand's, F. VIII 25%.....	7 min., 30 sec.	14 min.	70.3 sec.
Christmas disease, F. IX 35%.....	4 min., 30 sec.	11 min., 30 sec.	46.2 sec.
ITP, platelets, 10,000.....	3 min., 15 sec.	—	—
Leukemia, platelets, 10,000.....	3 min., 30 sec.	—	—
Leukemia, platelets, 10,000.....	3 min., 50 sec.	—	—
Fanconi's anemia, platelets, 25,000.....	5 min.	15 min.	—

Thrombocytopenia was associated with normal ACT results except for the abnormal value of 5 minutes obtained from the patient with Fanconi's anemia.

In figures 1 and 2 data obtained from 2 hemophilic boys who were receiving replacement therapy are shown. The first patient (figure 1) was a 5-year-old boy with hemarthrosis of a knee. He was given 4 cryoprecipitates. Factor VIII

minutes. Activated clotting times beyond the normal range were obtained as the factor VIII concentration declined. The second hemophiliac, a 7-year-old boy, suffered a retroperitoneal hemorrhage. Replacement therapy was more vigorous and consisted of the administration of fresh blood and several cryoprecipitates (figure 2). Activated clotting times and specific factor VIII assays were performed throughout the course of treatment.

ACT values were within the normal range when factor VIII concentrations were 15 per cent or greater. Following excellent clinical response to treatment, replacement therapy was discontinued. The ACT became abnormal as the factor VIII concentration declined.

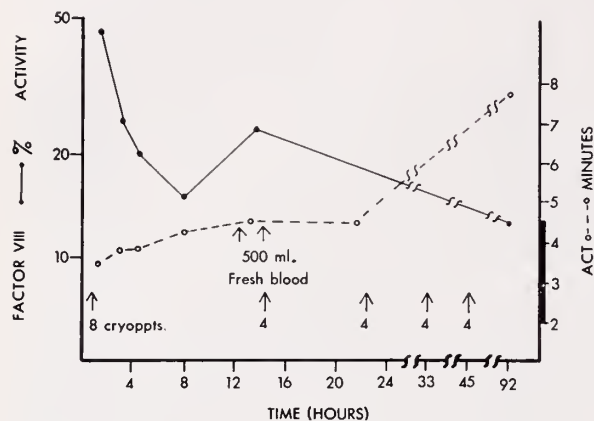


FIG. 2. Treatment schedule and coagulation studies in a 7-year-old hemophiliac with retroperitoneal hemorrhage.

Discussion

The results obtained in this study generally confirm Hattersley's earlier work and also that of Hoffman. Our procedure for the ACT differed slightly from their methods in that rigid requirements of temperature control and the use of evacuated test tubes were discarded for the practical considerations of availability. A minor sacrifice in sensitivity occurred as a result of these modifications. This is evident in the ACT values obtained in our healthy subjects in whom the mean clotting time was significantly longer than that reported both by Hattersley² and by Hoffman, and a greater variation in the individual clotting times was observed. Despite this loss of sensitivity the ACT test at room temperature proved eminently suitable as an easy, rapid, and reproducible bedside tool requiring a minimum of equipment.

In the small group of patients with congenital deficiencies of factors VIII or IX the ACT as performed in this study was sensitive to all but the most mild deficiency states. It is precisely this type of patient, however, for whom the most sophisticated coagulation tests are required for detection. The Lee-White coagulation time proved cumbersome in patients with severe hemophilia and insensitive in patients with partial deficiencies.

Utilizing careful temperature regulation, Hattersley also found that the ACT in some patients with partial deficiencies fell within the normal

range. Hoffman stated that in his study the clotting time of blood subjected to maximal activation was a more sensitive screening method than the nonactivated partial thromboplastin time. In our study the activated PTT gave abnormal results in all patients with mild and severe deficiencies of factors VIII or IX.

Thrombocytopenia had no effect on the ACT of blood in the few patients studied except for the abnormal result obtained in the patient with Fanconi's anemia. In the studies previously cited thrombocytopenia was not associated with consistent ACT results. Further investigation will be required to clarify this point.

The most important use of the ACT test will undoubtedly be in the management of replacement therapy in hemophiliacs. Here the test will serve as a reliable guide to the need for additional treatment in the form of cryoprecipitates or fresh plasma as in our patient with retroperitoneal bleeding. Performed before and immediately after a transfusion, as in the patient with a simple hemarthrosis, the ACT will assess the efficacy of treatment. Significant improvement in the ACT must occur after a transfusion; otherwise the potency of the infused material should be questioned or the presence of an inhibitor suspected.

The diagnosis of consumption coagulopathies and the management of heparin administration are other coagulation disorders in which the ACT test should prove useful.

Summary

The activated clotting time test of Hattersley was modified and used in testing a group of normal subjects and patients with bleeding disorders. Although a loss in sensitivity was evident when compared to methods employing stringent temperature control, the modified test proved to be an easy, rapid, reproducible, and sufficiently sensitive tool for evaluation of blood coagulation at the bedside. Its most critical contribution lies in its usefulness in the management of hemophiliacs receiving replacement therapy.

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Cataract Surgery: Recent Developments

LT. COMMANDER THOMAS H. F. CHALKLEY, MC, USNR*

RECENT INNOVATIONS in cataract surgery have alleviated the efforts of the ophthalmic surgeon and increased the probability of a good result. Basically they fall into 2 categories: pharmaceutical preparations and gadgets.

Among the most important ophthalmic preparations now used in cataract surgery are hypotensive drugs, both carbonic anhydrase inhibitors and osmotic agents, acetylcholine, and the enzyme alpha chymotrypsin.

Drugs

Hypotensive agents. Two of the most serious complications of cataract surgery are loss of vitreous and the expulsive hemorrhage which is caused by a break in a retinal or a choroidal arteriole when the globe has been opened. The sudden welling up of the blood in the back of the eye under arteriolar pressure forces the contents of the eye out through the open wound, obviously a disaster. Part of the support of the arteriolar wall is due to the tissue pressure of the surrounding structures that, in turn, are partially dependent on the normal (15 to 20 mm. Hg) intraocular pressure. If the globe is opened this pressure suddenly drops to that of atmospheric pressure. The higher the initial intraocular pressure, the greater the drop. In older persons, in whom an arteriolar wall may be weakened by arteriosclerosis, this sudden drop in intraocular pressure may be followed by a break in the vessel wall and an expulsive hemorrhage. Therefore, it is desirable to have the intraocular pressure quite low before the eye is opened. Heretofore one method of softening an eye preoperatively was by manual massage. Since the trauma of manipulation occasionally causes a dislocation of the lens and perhaps some impairment of the ocular blood flow, massage is not an ideal solution. The use preoperatively of a carbonic anhydrase inhibitor, such as Diamox® (acetazolamide), Daranide® (dichlorphenamide), or Oratol® (dichlorphenamide), results in the decreased production of aqueous and a gradual softening of the eye.

Osmotic agents, such as intravenous urea, mannitol, or glycerol, also decrease intraocular pressure by lessening aqueous production. Another advantage of these osmotic agents is their tendency to dehydrate the vitreous and cause actual shrinkage. An additional benefit is a lessening of the likelihood of vitreous loss at the time of operation. Therefore, it is now commonplace to administer both a carbonic anhydrase inhibitor and an osmotic agent (generally, glycerol) preoperatively.

Enzymes. Barraquer¹ introduced alpha chymotrypsin to ophthalmology after he noted that this enzyme selectively lyses the suspensory zonules of the lens when introduced into the eye. In cataract surgery it is a great advantage to be able to remove the entire lens in 1 piece. In older patients with weak and degenerating zonules, the procedure is generally fairly easy, but in younger persons the zonules tend to be stronger and harder to break. Frequently, in attempting to break the zonules the capsule of the lens is broken instead and the lens fragments disperse. Complications, such as endophthalmitis, iritis, and glaucoma, are more likely to ensue. Thus, alpha chymotrypsin used in selected cataract cases is beneficial, widely accepted, and commonly used.²

Choline-esterase drugs. After the surgeon removes the cataract it is frequently desirable to make the pupil miotic. The contracting action tends to pull the iris out of the wound and to make it function as a partial diaphragm and serve as a buttress against vitreous loss. Since generally used miotics, such as pilocarpine and carbachol, act too slowly to be of much value during the operation, a rapidly acting miotic that could be applied directly to the iris is indicated. This problem has been solved by a new preparation of acetylcholine, which is generally used in concentrations of 1:100 to 1:500. The pupil responds almost immediately, and a good miosis generally can be achieved. Side-effects appear to be minimal.

Gadgets

Among these devices are sutures, various types of cryogenetic apparatus, and the operating microscope.

Sutures. Because suture material and needles

* Staff member, Department of Ophthalmology, United States Naval Hospital, National Naval Medical Center, Bethesda, Md. 20014.

could not be adequately miniaturized until the second or third decade of the twentieth century the use of sutures in cataract surgery is of relatively recent origin. Lately the advances in manufacture of suture material and needles have been extensive. Most surgeons now use 6-0, 7-0, and 8-0 material swedged onto appropriately fine needles. The suture itself is generally of silk, but catgut and collagen sutures are also being used more frequently.³ As suture material is improved, more and more sutures are being used to close cataract wounds, resulting in better closure and fewer fistulas and wound dehiscences postoperatively, earlier ambulation of the patient, and earlier discharge from the hospital. Quite commonly the patient begins ambulation on the first day after operation and is discharged on the sixth or seventh day. These measures are advantageous to the elderly patient, who is spared the dangers inherent in prolonged bed rest, and to the hospital that needs its too few beds for other patients.

Cryoextraction. The use of cryoextraction in cataract surgery is new, but the principle of cryogenetics is about 30 years old. Tissue adheres to very cold objects. Thus, when a cold probe is touched to the cataractous lens that is ready for extraction a ball of ice forms at the point of contact and the lens can then be removed easily, quickly, and in 1 piece (figure 1), further reduc-

tubes to the hand-held probe (figure 2). These contrivances are rapidly replacing the forceps and suction cups formerly used.



FIG. 2. Cataract that has been removed in toto by a cryogenic probe. Arrow points to white ice ball that occupies almost entire top third of lens. Distal half of the probe is covered with frost.



FIG. 1. Cataract extraction by means of a cryo-styler (arrow). Surgeon removes cataract as assistant elevates cornea.

ing the incidence of extracapsular complications and vitreous loss and undue trauma. The cryogenetic devices are either self-contained and hand-held, such as the Cryophake,^{®*} or a machine which has the cooling apparatus attached by

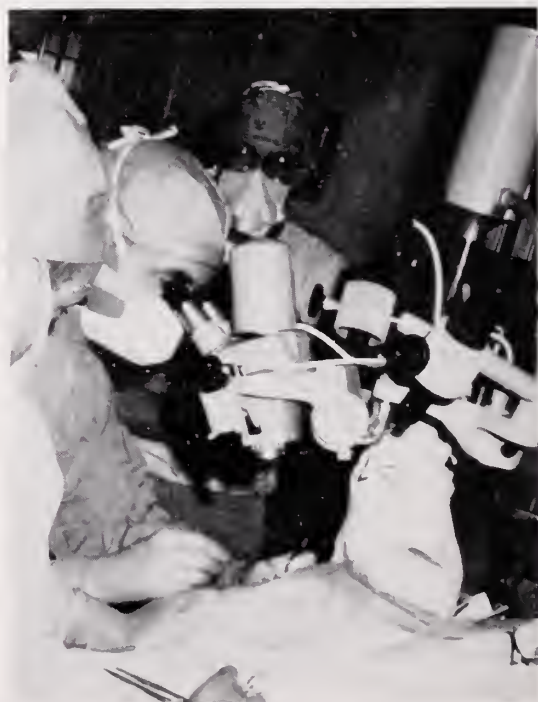


FIG. 3. Keeler operating microscope being used during cataract surgery. Focusing controls are to a large extent operated by foot pedal.

* A product of Alcon Laboratories.

Microsurgery. Because the parts of the eye are so small and require delicate manipulation the average surgeon who works on and in the eyes has trouble adequately seeing his operative field. Generally, his close vision is augmented by magnifying glasses or various types of loops. Microscopes now being developed are adaptable enough to permit him to function efficiently with this large machine between himself and the patient's eye. These newer models have features such as independent illumination, Zoom lenses, foot controls, and virtually automatic focusing (figure 3). They offer excellent magnification through splendid optical systems. More and more ophthalmic surgeons are routinely using an operating microscope when removing a cataract.⁴

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Cancer Patients Needed for Clinical Center Studies

THE COÖPERATION OF PHYSICIANS is requested in the referral of patients for studies being conducted by the National Cancer Institute at the Clinical Center, National Institutes of Health, Bethesda, Md.

Bilateral cryptorchidism. Needed for these studies are patients of all ages with bilateral cryptorchidism. Patients in whom exploration is contemplated or in whom exploration has already

failed to reveal gonads are of particular interest. Upon completion of their studies, patients will be returned to the care of the referring physician, who will receive a summary of findings.

Physicians interested in having their patients considered for admission to these studies may write or telephone Dr. Elwin W. Fraley, Clinical Center, Room 10-N-119, National Institutes of Health, Bethesda, Md. 20014; telephone (301) 656-4000, Ext. 63351, or Dr. Marvin A. Kirschner, Clinical Center, Room 12-N-206, National Institutes of Health; telephone (301) 656-4000, Ext. 63079.

Lymphosarcoma. Patients with biopsy-proven lymphosarcoma who have received no treatment are eligible for admission as inpatients for diagnostic evaluation and treatment as indicated. Upon completion of their studies patients will be returned to the care of the referring physician, who will receive a summary of findings.

Physicians interested in having their patients considered for admission to this study may write or telephone Dr. Robert B. Howe, Clinical Center, Room 4-B-09, National Institutes of Health, Bethesda, Md. 20014; telephone (301) 656-4000, Ext. 62031.

Kinetics of cellular proliferation and growth rate in solid tumors. The purpose of this investigation is to gain information on rate of cellular proliferation and growth of tumors in man.

A limited number of patients with untreated lymphosarcoma, or reticulum-cell sarcoma with tumor readily accessible to biopsy, are of particular interest. Patients with other tumors, particularly lung, will be considered if they have accessible disease. Following the study, patients will be treated when appropriate. When the study is completed the patient will be returned to the referring physician.

Physicians interested in referring patients for these studies should write or telephone Dr. Vincent T. DeVita, Clinical Center, Room 12-N-236, National Institutes of Health, Bethesda, Md. 20014; telephone (301) 656-4000, Ext. 61480.

Fluoxair—A New Draw-over Anesthetic Apparatus

LT. COMMANDER CHARLES J. VACANTI, MC, USN,* COMMANDER ROBERT J. VAN HOUTEN, MC, USN,† AND LT. COMMANDER EMIL E. POLLARD, MC, USN*

BECAUSE OF THE CONTINUING potentially explosive international situation the need to be able to give safe, adequate anesthesia, both in domestic mass casualty situations as well as in remote areas of the world, becomes more pressing with each passing year. In adverse situations there will always exist the possibility of being unable to obtain an adequate supply of compressed gases and carbon dioxide absorbent. Therefore, physicians should be prepared to circumvent these problems if they expect to function during such crises.

It has long been known that safe anesthesia can be administered in time of need without all the elaborate equipment used by present anesthesiologists. When compressed gases, oxygen in particular, are unobtainable, the standard anesthetic machine becomes a useless piece of equipment. In such circumstances a simple vaporizing apparatus using room air would be advantageous. Ideally, such an apparatus would be able to deliver supplemental oxygen if compressed gases are available.

One of the first "simple" methods of administering anesthesia was with a draw-over apparatus. Flagg¹ in the 1930's utilized a discarded ether can as a vaporizing chamber to which was added a breathing tube and mask, thereby allowing the patient to draw air over liquid ether in the can. Later, with the advent of non-rebreathing valves, MacIntosh and Mendelsohn² introduced their original Oxford vaporizers improving the air-drawn-over-ether technique. These vaporizers now have been superseded by the thermally compensated Epstein-MacIntosh-Oxford (E.M.O.) inhaler.³ As a means of positive pressure an Oxford-Inflating-Bellows (O.I.B.) was added to the ether inhaler.⁴ The O.I.B. consists of a spring-loaded concertina-like bellows with a 1-way valve on each side to insure unidirectional flow. In subsequent

years, along with the development of the newer volatile agents, a variety of new draw-over type vaporizers evolved. One such vaporizing apparatus is the Fluoxair®.

Description of Apparatus

The Fluoxair is a completely portable anesthetic machine designed for the administration of halothane vapor in air to which supplemental oxygen may be added if desired and if available. The unit comes packed in a sturdy wooden case measuring 12 by 10 by 14 inches and weighing approximately 22 pounds. Ultimately the unit will be carried in a durable, water-tight but light-weight aluminum case, reducing its overall weight to approximately 13 pounds. All the equipment necessary for the administration of an anesthetic can be contained within the case.

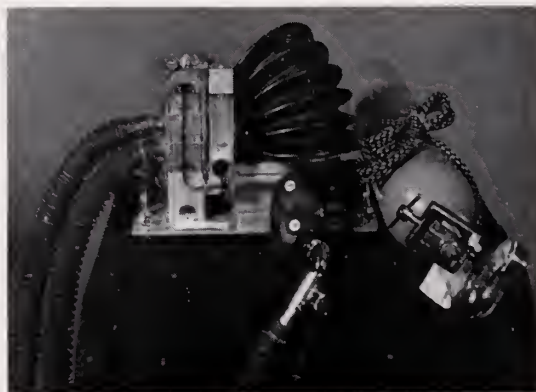


FIG. 1. Fluoxair apparatus with attached oxygen cylinder.

The Fluoxair unit itself (figure 1) consists of a thermally compensated wick vaporizer of the Fluotec®-type with a capacity of 70 c.c. of liquid, mounted on a base incorporating an air-inlet port, a spring-loaded concertina bellows, non-rebreathing unidirectional valve system, and an "oxygen economizer."

The vaporizer has several built-in safety features. It cannot be overfilled. When charged with a

* Staff member, Anesthesia Service, United States Naval Hospital, National Naval Medical Center, Bethesda, Md. 20014.

† Chief of Anesthesia Service, United States Naval Hospital.

liquid anesthetic agent it will not spill if overturned. It is designed to deliver concentrations of halothane from 0.5 to 5.0 per cent, the calibrations being quite accurate between 68° and 119°F when the patient's minute volume is between 3 and 8 liters per minute.

The spring-loaded concertina bellows on the anesthetic unit makes it suitable for use as a resuscitation apparatus. The capacity of the bellows is 3 liters. For those who object to using a bellows, any type of self-inflating bag may be substituted.

The unidirectional valve system is suitable for use with spontaneous, assisted, or controlled respiration. The resistance of the draw-over vaporizer and valves depends largely on the vaporizer setting. These resistances have been shown to be comparable and in some instances less than other widely used non-rebreathing equipment.^{5, 6}

For the Fluoxair to be operated with supplemental oxygen, a 3-liter range, bobbin-type, oxygen flow meter is provided with the necessary regulator, cylinder pressure gauge, and pin-indexed yoke attachments for standard oxygen cylinders. A 500 c.c. rigid reservoir located between the vaporizer and the air-inlet port is termed an "oxygen economizer." When air is supplemented with oxygen, the oxygen passes into the economizer during exhalation displacing air retrograde through the air-inlet port. As the patient inhales he first draws oxygen from the economizer and then air via the inlet port. The percentage of oxygen received by the patient is a factor of his minute volume and the rate of flow of oxygen, as shown in figure 2. This graph is conveniently mounted on the base of the apparatus for ready reference. The average adult with a

6-liter minute volume can be supplied with about 33 per cent oxygen at a flow rate of only 1 liter per minute. Wilson⁵ and Joyce^{7, 8} have shown that arterial oxygen tensions usually will exceed 70 mm. Hg on air alone without supplemental oxygen during the course of an anesthetic, even with spontaneous breathing.

Methods

The Fluoxair was designed and calibrated for the administration of halothane. In addition to halothane we have investigated its potential to vaporize methoxyflurane, diethyl ether, and the halothane-ether azeotrope. The unit was used to administer anesthesia to 100 unselected patients ranging in age from 15 days to 84 years receiving all types of emergency and elective surgical procedures. In addition, the Fluoxair was used to resuscitate 19 patients.

The physical status distribution (table 1) was that of an average, unselected patient population.

TABLE 1: Physical Status Distribution
in 119 Cases

Physical Status	No. Cases	Physical Status	No. Cases
1	62	1E	5
2	26	2E	7
3	11	3E	3
4	0	4E	1
5	1	5E	3

The age group, by decade, is shown in table 2. Slightly under one-half of the patients fell into the pediatric-age group. Aside from using pediatric-sized masks or endotracheal tubes no change in equipment was made from that used in adults.

TABLE 2: Age Grouping Distribution

Age Group in Years	No. Cases
0-2	19
3-10	26
11-20	8
21-30	12
31-40	17
41-50	18
51-60	11
61+	8
TOTAL CASES.....	119

Results

Table 3 shows the various types of surgical procedures by region and the agent vaporized.

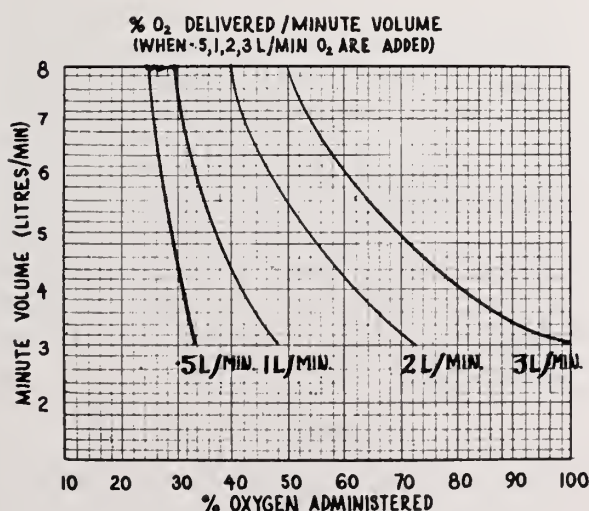


FIG. 2. Oxygen-air percentage graph.

These figures represent 172.4 anesthetic hours with the Fluoxair. Procedural time varied from 10 to 600 minutes, the average being 87 minutes.

TABLE 3: Surgical Procedure Distribution

Procedure by Region	Number of Cases			
	Halothane	Halothane-ether Azeotrope	Diethyl Ether	Methoxyflurane
Eye.....	5	1	0	2
ENT.....	13	1	0	6
Intracranial.....	3	0	0	0
Intrathoracic.....	0	0	0	1
Upper abdomen.....	6	1	1	1
Lower abdomen.....	8	1	1	8
Major vascular.....	2	0	0	0
C-section.....	1	0	0	0
Extremity.....	5	3	1	1
Other.....	19	2	0	7
TOTAL.....	62	9	3	26

Resuscitation only 19

With halothane or the halothane-ether azeotrope the Fluoxair readily delivered concentrations necessary for induction and maintenance of anesthesia. The unit also delivered adequate maintenance concentrations of methoxyflurane and diethyl ether. Inductions with these agents were prolonged; this may have been a result of the low maximum concentration of these agents that the vaporizer could deliver. This did not prove to be an obstacle to using these agents in the apparatus for maintenance of anesthesia. Inductions were readily facilitated by the addition of an intravenous thiobarbiturate and/or an intravenous muscle relaxant. In the absence of these the open-drop technique provided a satisfactory induction for methoxyflurane or diethyl ether.

Discussion

The Fluoxair can be used as a quantitative multiagent vaporizer. By comparing the vapor pressure of the agent used to the vapor pressure of halothane, the conversion factor for the vaporizer dial settings can be calculated and the percentage of the volatile agent being delivered ascertained. Table 4 shows that the vaporizer is capable of delivering necessary induction and maintenance anesthetic concentrations of halothane, halothane-ether azeotrope, fluorene, and chloroform. It is capable of delivering maintenance concentrations of methoxyflurane and diethyl ether. It would appear that concentrations of trichloroethylene

vaporized should be adequate for surgical anesthesia. As with all wick vaporizers, the wick of the apparatus must be thoroughly dry before changing to another agent. The MAC value (minimum alveolar concentration) as determined by Eger, et al^{9, 10} for each of the principal volatile agents can be delivered by the Fluoxair.

An additional feature of the Fluoxair is its adaptability for coupling to other draw-over vaporizers, such as the E.M.O. or the Flagg can, at its air inlet port. Monitoring devices such as the Wright respirometer can be mounted on the expiratory limb of the machine. To demonstrate the very low volumes of air flow that cannot be detected by the Wright, the "Saturn monitor" designed by Elam¹¹ may be incorporated into the Y-piece or the valve system.

TABLE 4: Vaporizer Conversion Factors

Agent	Vapor Pressure at 20°C	Setting Multiplication Factor	Maximum Per cent Vaporizer Delivers*	Usual Per cent Anesthetic Range*
Halothane.....	242	1.00	5.0	0.5-5.0
Halothane - ether Azeotrope.....	213	0.88	4.4	2.0-5.0
Fluorene.....	286	1.18	5.9	0.5-6.0
Chloroform.....	160	0.66	3.4	0.2-4.0
Methoxyflurane...	25	0.10	0.5	0.1-3.0
Diethyl ether.....	440	1.82	9.1	3.5-20.0
Trichloroethylene..	60	0.25	1.2	0.2-2.0

* Volume/Volume.

Summary

The Fluoxair is a new draw-over apparatus designed for the administration of volatile anesthetics with the use of room air. It is functionally independent of a supply of compressed gases or carbon dioxide absorbent. It is so designed that it may be used with supplemental oxygen if available and if desired. The apparatus is compact and portable and can be used clinically with all of the volatile anesthetic agents. It may be used for resuscitation. The same apparatus can be used for both adults and children. The Fluoxair is eminently suited for adverse military situations, for civil defense and disaster purposes, and even for routine hospital use.

References

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(Continued on page 252)

A Method for Reconstruction of the Coracoclavicular Ligament in Acromioclavicular Joint Injuries

N. T. DEBEVOISE, M. D.,* AND CAPTAIN R. H. BROWN, MC, USN†

ANY OF A SPECTRUM of acromioclavicular joint injuries, ranging from a simple sprain of the capsular ligament to dislocation of the joint with loss of continuity of the acromio- and coracoclavicular ligaments, may occur from a fall on the outstretched arm or on the apex of the acromion.

Simple Sprain

In cases of simple sprain one expects reestablishment of full joint function (figure 1). Later,

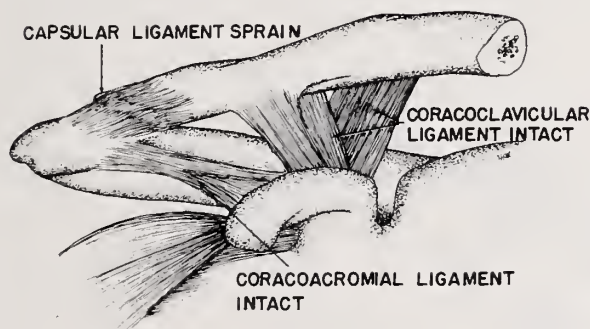


FIG. 1. Simple sprain of acromioclavicular joint.

however, in a small number of patients symptomatic arthritic changes may develop in the acromioclavicular joint. When this occurs, excision of the outer end of the clavicle may be necessary. In simple sprain about the acromioclavicular joint there is pain. The pain is usually aggravated by active shoulder motion. The fibers of the capsular ligament are torn, and the articular cartilage and fibrocartilaginous disc may be partially detached. Palpation over the acromioclavicular joint elicits tenderness. Swelling may be present, but separa-

tion of the clavicle from its relationship with the acromion cannot be demonstrated. X-ray films made while the patient holds weights in the affected extremity similarly show no separation of the clavicle from the acromion.

Subluxation

A more severe degree of injury results when there is an incomplete tear of the restraining coracoclavicular ligament coupled with the sprain of the acromioclavicular ligament. The coracoclavicular ligament consists of 2 portions, the trapezoid ligament (the lateral) and the conoid ligament (the medial). In this injury subluxation of the acromioclavicular joint may be present (figure 2).

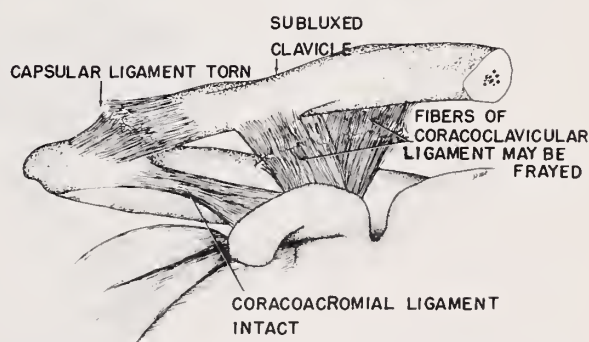


FIG. 2. Subluxation with acromioclavicular joint sprain.

Separation of the clavicle from the acromion is incomplete, which distinguishes this from a joint dislocation. Subluxations generally heal when the joint is immobilized with a sling, a sling and swathe, or with adhesive strapping to maintain the anatomic relationship between the clavicle and the acromion. As with acromioclavicular joint sprains, a few patients with subluxations may later develop arthritic changes. Such patients may require resection of the outer clavicle for relief of pain.

* Formerly Commander in the Medical Corps of the United States Navy. Address: 916 19th Street, N.W., Washington, D. C. 20006.

† Chief, Department of Orthopedic Surgery, United States Naval Hospital, National Naval Medical Center, Bethesda, Md. 20014.

Dislocation

Our particular interest is in the complete dislocation of the acromioclavicular joint. Even the insertions of the trapezius and the deltoid into the clavicle may be torn in such severe injuries. Clinical examination shows tenderness over both the acromioclavicular joint and the coracoclavicular ligament. Swelling and localized tenderness may be more severe in complete dislocations than in sprains or subluxation. An occasional phlegmatic patient has few complaints other than that his clavicle rides high. Traction by means of a suspended weight on the affected extremity shows radiographic dislocation of the acromioclavicular joint. Sometimes this dislocation is seen in X-ray films without the use of weights (figure 3).

Nonoperative techniques, such as the use of adhesive strapping, a plaster body jacket with an attached webbed belt, or other similar harnesses, may successfully reduce the complete dislocation. The problems of skin irritation and the patient's intolerance to the appliance plus recurrence of the deformity even after prolonged immobilization may lead to results which are less than satisfactory.

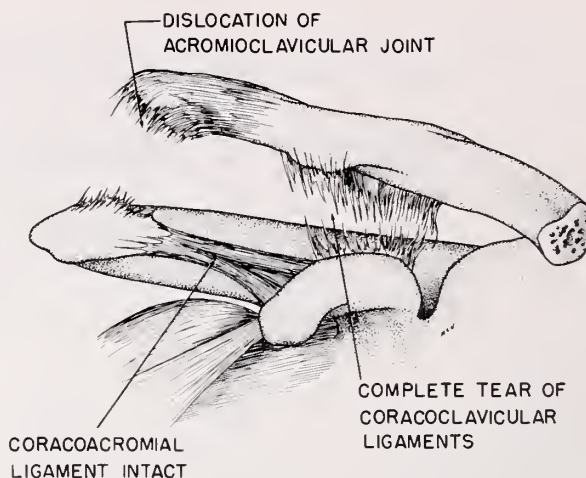


FIG. 3. Dislocation of acromioclavicular joint.

and the coracoid process,² (3) repair or replacement of the coracoclavicular ligament with local tendons or fascial grafts,³ and (4) imbrication of the proximal deltoid and trapezius muscles⁴ (figure 4).

Success of the operative method depends upon the restoration of the tethering function of the coracoclavicular ligaments. Although Urist⁵ and

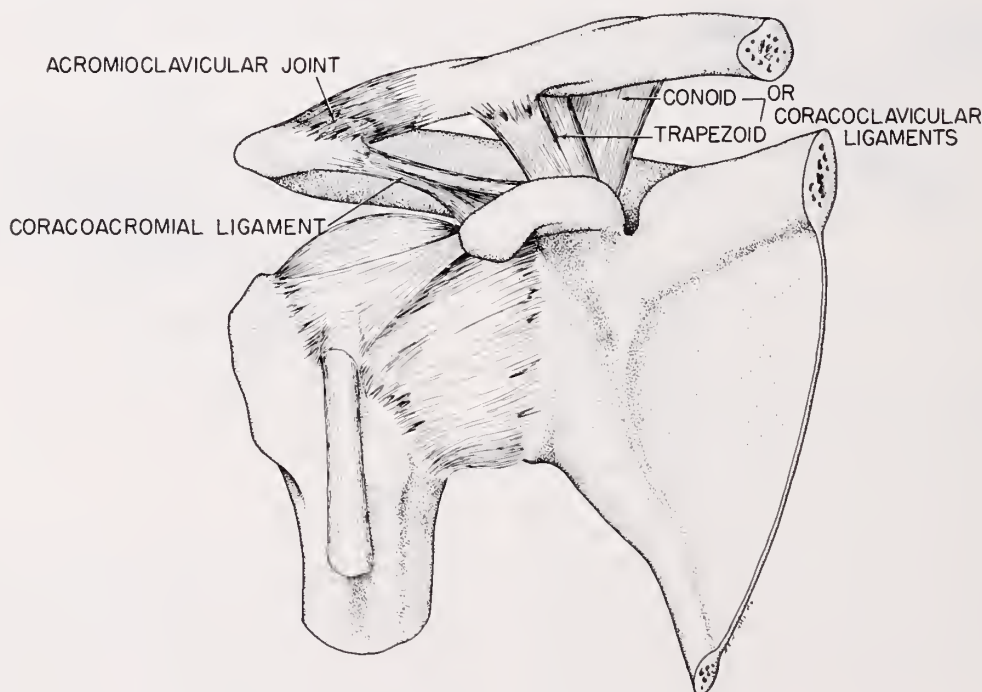


FIG. 4. Normal acromioclavicular joint.

A variety of operative repairs have been devised.¹ These include (1) the use of a Kirschner wire across the acromioclavicular joint for fixation, (2) the use of a screw between the clavicle

Moore⁶ have recorded that dislocations of the acromioclavicular joint can occur when the conoid and the trapezoid ligaments are intact, this has not been our experience. The healing time for

ligaments is from 4 to 6 weeks. The better the approximation of the torn ends of the ligaments, the sooner maximal ligament strength will be attained.

The coraco-acromial ligament. The coraco-acromial ligament is a phylogenetic remnant of a bone found in reptiles. It is a triangle which is attached by its apex to the acromion process and by its base to the coracoid process. It consists of 3 bands: the anterior and posterior are well-defined longitudinal fibers, the intervening portion is loose areolar tissue. The anterior fibers are based forward on the coracoid process and run obliquely backward to the apex. The posterior fibers arise farther back on the coracoid process and run toward the apex at the acromion. In rare instances the tendon of the pectoralis minor in part may insert into or through this ligament into the acromion (figure 5).

In 1917 Cadenat⁷ suggested that the posterior portion of the ligament be cut from its acromial insertion and transferred into the clavicle to replace the coracoclavicular ligaments. In 1939 Campos⁸ reported a small series of cases in which the entire coraco-acromial ligament was detached from the acromion and transplanted into the clavicle. Neviasser⁹ in 1951 described a different use of the coraco-acromial ligament in dislocations of the acromioclavicular joint. He detached the coracoid insertion and transplanted it into the clavicle. In essence, he stabilized the acromioclavicular joint by making a new capsular or acromioclavicular ligament. He augmented the repair with a Kirschner wire across the joint for immobilization. Neviasser still uses this method and is quite satisfied with his end-results.

Operative Method

Since 1955 the method of Campos has been used at the Naval Hospital, Bethesda, Maryland, with the added modification that a Kirschner wire is inserted across the acromioclavicular joint for stabilization while the transplanted coraco-acromial ligament is healing.¹⁰

This method has been used when conservative treatment of dislocations has failed and is our method of choice in a patient who cannot tolerate the conservative type of fixation. However, only with total disruption of the coraco-acromial ligament is this method used.

Under general anesthesia the patient is placed in the supine position and is so draped that the involved arm and shoulder are free for manipula-

tion. An S-shaped incision is begun over the anterior tip of the acromion and the anterior border of the clavicle. The cut is carried medially from the acromioclavicular joint and is then swung inferiorly toward the deltopectoral groove for 2-fingerbreadths. Both the acromioclavicular joint and the distal quarter of the clavicle are exposed. The ruptured capsular ligaments permit access to the acromioclavicular joint. All loose cartilage or fibrous tissue is removed so that complete reduction may be effected. A small threaded Kirschner wire is drilled through the acromion, thence across the acromioclavicular joint and into the clavicle for a distance of 4 cm. The cut end of the Kirschner wire is hooked over to prevent its migrating inward.

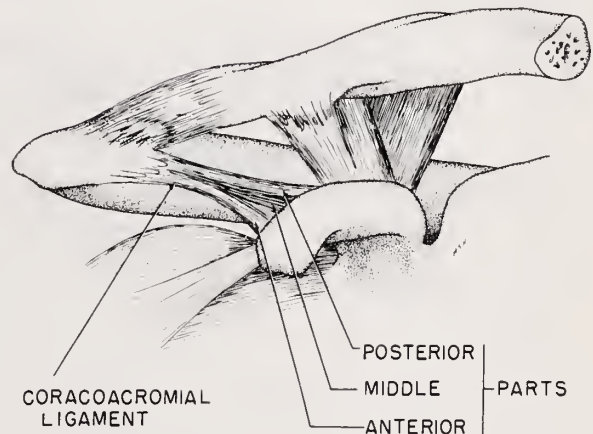


FIG. 5. Normal acromioclavicular joint with details of the coraco-acromial ligament.

The coraco-acromial ligament is precisely identified and is cleaned by blunt dissection. By meticulous sharp dissection the entire acromial insertion of the ligament is severed from the acromion in a manner to preserve its maximal length. The coraco-acromial ligament is now turned so that the apex is brought through a drill hole in the clavicle at the site of the trapezoid ligament insertion. The coraco-acromial ligament is secured further by catgut sutures through the periosteum. No attempt is made to suture the ruptured coracoclavicular ligaments. The wound is closed in layers (figure 6).

Postoperatively a sling and swathe are used for immobilization. At the end of 6 weeks the fixation pins are removed under local anesthesia. Shoulder mobilization exercises are then started. The fixation wires would inevitably break if not removed when subjected to the repeated stress of shoulder motion.

Results

Between 1955 and 1965 17 cases of acromioclavicular joint dislocation have been surgically treated by the foregoing method. This number represents 20 per cent of the cases with acromioclavicular joint injuries admitted during this period.

Each of the 17 patients except 1 returned to his former occupation after an uneventful postoperative course. This patient had gone without treatment for 2 months after his injury. Following the definite operative procedure described above he developed traumatic arthritis. One year after his

Discussion

Opinions as to the ideal treatment for the complete acromioclavicular joint dislocation differ widely. Some think that the dislocation may be allowed to go untreated except for the use of a sling during the first week or 2. We believe our position to be a moderate one. We prefer to retain the outer end of the clavicle if possible because we think it helps to stabilize the shoulder. On the other hand, if it is resected the patient experiences a loss of full strength. Possibly this loss has a relationship to the fixation of part of the trapezius

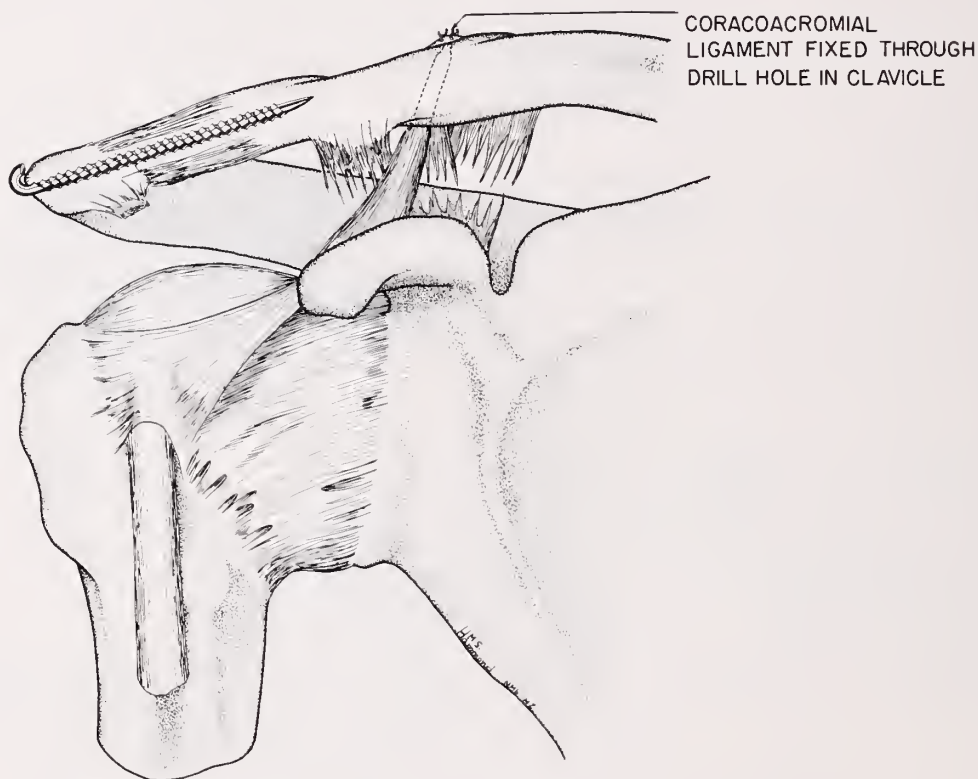


FIG. 6. Completed repair.

surgery it was necessary to excise the outer end of his clavicle. At the time of this resection his transplanted coraco-acromial ligament was inspected. Marked hypertrophy of the transplanted coraco-acromial ligament was noted. The coraco-clavicular relationship was maintained, as evaluated by clinical and X-ray examinations. The patient thought that he had lost some of his former shoulder strength after excision of the outer end of the clavicle. No other complications were encountered in this series. One patient was followed more than 5 years, and when last examined he was asymptomatic and had a shoulder normal in strength, function, and stability.

and deltoid muscles to the outer end of the clavicle. Our method of repair permits restoration of normal anatomy. This operative method is particularly indicated in the case of the patient whose occupation calls for strenuous physical activity. Many young military patients perform rigorous field duty which demands the maximal restoration of function, strength, and stability of the acromioclavicular joint that is possible. In the patients whose occupation is and will continue to be sedentary one may accept a more conservative approach.

(Continued on page 220)

Treatment of Fat Embolism

Report of Two Cases

CAPTAIN T. H. WILSON, JR., MC, USN, F.A.C.S.*

THE FACT that fat can be dislodged by trauma to enter the blood stream and appear in the lungs has been known for many years. The association of fat embolism with fractures is well known and probably very commonplace, though not necessarily of clinical importance. Less well known, perhaps, is the fact that fat embolism can occur without fractures, as, for example, in blunt trauma to the liver.¹ It would be very easy to imagine the liquid fat seen in massive soft-tissue injuries entering open veins in the traumatized area. Fat embolism has been seen when hyperlipemia and pancreatitis coexist, and it is claimed that fat can be spontaneously released from a fatty liver to enter the circulation.²

In all probability the lungs act as an efficient filter of circulating fat globules, and it is only in massive fat embolism that fat escapes the lungs and lodges in cerebral, renal, cardiac, retinal, and cutaneous vessels. In the lungs fat may cause tachypnea, rales, and wheezes. An X-ray film may show diffuse patchy infiltrates.³ The right heart may show electrocardiographic (ECG) evidence of strain, and increased venous pressure may be noted due to increased pulmonary vascular resistance. The occlusion of small coronary vessels may produce an ECG pattern of ischemia. Fat embolization to the kidney causes showers of red blood cells to appear in the urine. In the brain minute hemorrhages may be responsible for cerebral edema, confusion, hallucinations, delirium, coma, and death. Fat emboli in cutaneous vessels produce petechiae, most commonly in the axillae, over the anterior thorax, and on the neck. Some authors state that occasionally fat globules have been seen occluding retinal vessels.

The more alarming cases of fat embolism may deteriorate rapidly, with high fever, tachycardia, delirium, successive crops of petechiae, hematuria, pulmonary congestion, and arterial oxygen desaturation resulting in eventual cardiac failure and death. Furthermore, massive upper gastrointestinal hemorrhage has been observed in associa-

tion with fat embolism, though whether this is a specific relationship or merely a manifestation of stress is not clear.^{4, 5}

Although the clinical state is becoming more readily recognized, laboratory confirmation is not reliable.⁶ The presence of fat in the urine is not normal, and if it is found the diagnosis of fat embolism must be strongly suspected. Fat in the sputum is not of diagnostic significance.

The ideal therapy of fat embolism is still far from certain. Experimental data suggest several approaches. Alcohol can physically disrupt fat globules to the point that they lose their occluding capacity. In the experimental animal pulmonary infiltrates due to fat have been seen to improve following the intravenous administration of alcohol. Heparin has a lipolytic effect and reverses the hypercoagulable state seen in trauma and shock.

When pulmonary and cardiac failure occur, oxygen and digitalis are indicated, and the steroid drugs have been used to support the patient in shock and to reduce cerebral edema. In 1963 Gonski⁷ reported 5 consecutive therapeutic successes in severe fat embolism. He emphasized the need for adequate immobilization of the injured extremity in an effort to forestall further embolization, 500 to 1,000 c.c. 5 per cent ethyl alcohol in 5 per cent dextrose in water intravenously every 12 hours until fever subsided, heparinization, and tracheostomy plus supportive care should coma develop. From Jerusalem Aladjemoff⁸ reported his efforts to lower the fever of fat embolism, using hypothermia induced by an intravenously administered "lytic cocktail" of 100 mg. promethazine, 100 mg. pethidine, and 50 mg. chlorpromazine in 100 c.c. of saline every 2 to 3 hours for 20 to 30 minutes until jerking and shivering stopped.

At the Naval Hospital, Bethesda, 2 patients have been recently successfully treated for critical, nearly fatal, fat embolization with the use of the therapeutic program described below.

Report of Cases

Case 1. A 50-year-old man fell from a ladder, sustaining a right-sided pelvic fracture. There were no

* Chief of Surgery, United States Naval Hospital, National Naval Medical Center, Bethesda, Md. 20014.

other serious injuries. The initial examination disclosed basilar rales, but the chest X-ray film was normal. A retroperitoneal hematoma developed, with bladder compression verified by cystogram. A bladder catheter was inserted. Three days after injury a painful swelling, interpreted as an incarcerated left inguinal hernia, developed rapidly. At operation this proved to be hematoma in properitoneal fat along the spermatic cord. On the same day a screw was placed in the right greater trochanter to exert lateral traction on the impacted femoral head. A routine urinalysis showed microscopic hematuria. On the fourth post-injury day rales were again heard in the chest. The next day the patient was nauseated and distended. Nasogastric suction was started and antacid therapy instituted because of the possibility of a stress ulcer. On the sixth postoperative day there were audible wheezes in the lungs, tachycardia, abdominal distention, low-grade fever, and apprehension. The white blood cells numbered 17,000 with a left shift. By the ninth day after his fall he was disoriented, tremulous, and hallucinating. He appeared slightly icteric. Coarse rhonchi were noted bilaterally. The following day he was worse, resembling a patient in delirium tremens. His serum electrolytes were normal, but his urine output was low. Rectal bleeding suddenly developed, and the patient became hypotensive. He vomited coffee-ground material. He was transfused and, because the diagnosis of fat embolism was being entertained, was given 250 c.c. of 5 per cent alcohol in 5 per cent dextrose in water.

Up until this point no petechiae had been observed. Urinalyses had shown hematuria on several occasions, attributed to the presence of the catheter. Fat had not been detected in the urine, sputum, or blood. A central venous catheter was inserted, and because the measured pressure was 15 cm. water, digitalis therapy was started. Gastrointestinal bleeding persisted, and on the eleventh post-injury day he was explored and a bleeding posterior duodenal ulcer was suture-ligated and a vagotomy and pyloroplasty accomplished. At this time he was febrile, wildly hallucinating, with tachycardia and dyspnea. Chest X-ray films showed haziness of the left lower lung. A urinalysis revealed red blood cells too numerous to count. It was on this day that petechiae developed for the first time in the typical locations. The diagnosis of fat embolism seemed conclusive and intravenous 5 per cent alcohol, heparin, digitalis, oxygen, and massive antibiotic therapy were vigorously pursued.

Because despite these agents hypotension ensued, 1.0 Gm. of Solu-Cortef® was given intravenously and 100 mg. in each subsequent liter of intravenous fluid. On this regimen he improved. During this very critical period his blood gases were repeatedly monitored and his initial serious desaturation was corrected with intermittent positive-pressure oxygen therapy as well as nasal oxygen administration. On the fourth postoperative day the abdominal wound dehiscence. Exploration of limited degree showed no evidence of disruption of the pyloroplasty, but the pancreas was noted to be

indurated. A subsequent serum calcium was 8.9 mg. On the fifth day after the dehiscence the patient vomited some coffee-ground material and his wound dehiscence once more. Since this time there was disruption of the pyloroplasty, a hemigastrectomy with Billroth II anastomosis was done. Drains were placed. A tracheostomy was done. Marked loss of pulmonary compliance was noted, and vigorous intermittent positive-pressure breathing therapy was required. Two days later, because of bloody gastric drainage, heparin was stopped. Nine days later methodical reduction of the steroid dosage was started. The patient began to eat. His tracheostomy was closed. From this juncture he progressively improved. His wounds healed. He resumed a full diet. He began to ambulate without weight-bearing on the right leg. His progress continued to be excellent, marred only by 2 brief episodes of atrial tachycardia, which responded to Cedilanid® therapy.

Heparin was used for a total of 12 days, first intravenously, 75 mg. every 6 hours and later 100 mg. subcutaneously every 6 hours, in an effort to keep the clotting time near 20 minutes. For 8 days 5 per cent alcohol in each of 2 to 3 liters of 5 per cent dextrose in water or saline was used. To each bottle of fluid 100 mg. of Solu-Cortef was added for 11 days, and then the dosage was gradually reduced and ACTH added until both could be stopped. Antibiotics were not used for their effect on fat embolism but for their protection of a patient needing surgery while on steroids. Digitalis was used to support a heart which exhibited such sustained tachycardia. Oxygen was required to keep the arterial saturation at 95 per cent or better. Calcium was briefly used because the serum calcium level had been depressed in association with what was interpreted as pancreatitis. Vitamins and serum albumin were added to the intravenous fluids to maintain adequate supplies of these substances during prolonged periods without food.

Case 2. This patient had a femoral fracture, treated with reduction and Jewett nail fixation. In the immediate postoperative period he developed paralytic ileus requiring the use of intravenous fluids and a nasogastric tube. Six days after the injury he became disoriented. The ninth day after his fall he was not only disoriented but had pulmonary signs and symptoms suggesting embolism. He suffered a brief cardiac arrest associated with what was considered to be a seizure. He responded promptly to external cardiac massage. His secretions were so copious that a tracheostomy was done. He became quite delirious. Arterial blood gases revealed marked desaturation. Because the differential diagnosis included pulmonary embolism and fat embolism, intravenous heparin was started. Because aspiration of gastric contents could not be excluded, steroid therapy and antibiotics were used. Later in the same day classical petechiae developed and red blood cells too numerous to count were found in the urine. Fat globules were identified in the urine and sputum. The diagnosis

(Continued on page 252)

Linitis Plastica Associated with Complete Situs Inversus

Report of a Case

CAPTAIN WILLIAM M. LUKASH, MC, USN,* AND LT. COMMANDER DENNIS K. WENTZ, MC, USNR†

ALTHOUGH A DRAMATIC DECLINE in the incidence of carcinoma of the stomach in the United States has been well documented,¹ the annual toll is 20,000 deaths. Any elderly patient with the triad of vague indigestion, anorexia, and weight loss should be suspected of having a gastric malignancy. Classifying the gross morphologic type of gastric cancer may also assist the clinician in estimating the clinical behavior and the prognosis of the various lesions. The categories are polypoid endogastric growths, penetrating ulcerations, and diffuse infiltrative lesions. Scirrhou carcinoma, or linitis plastica, is infiltrative and represents from less than 5 to about 12 per cent of gastric carcinomas.^{2, 3}

Although considered a rare form of cancer, linitis plastica is still seen with some frequency. In a study of 60 patients with gastric neoplasms seen at the Naval Hospital, Bethesda, 8 (13 per cent) had the radiographic and gross pathologic characteristics of linitis plastica. No instance of metastasis to the ovary or Krukenberg's tumor was seen.

The following case report illustrates some features of linitis plastica and, interestingly, is associated with complete situs inversus and a Krukenberg's tumor of the ovary.

Report of Case

A white woman 40 years of age was admitted to the hospital because of ascites and lower abdominal pain. Two months before admission the patient had first noticed that her abdomen was swollen. She experienced anorexia, general weakness, and fatigue. Eighteen months before her admission she had been treated for a gastric ulcer which was shown by roentgenogram to be in the lesser curvature of the stomach, and with the

usual therapy it apparently had healed. Also, at that time she was found to have situs inversus with the organs of both the thorax and the abdomen transposed. The patient had no dysphagia or gastrointestinal bleeding. Her bowel movements were normal, and menses occurred regularly.

Past medical history and systemic review were non-contributory. The patient was chronically ill and had much ascites. She was not jaundiced, and nodes could not be palpated in the supraclavicular area or axillae. The heart and lungs were found to be normal. A large, tender, 25 cm. mass, palpated in the right lower quadrant extended well above the mid-portion of her abdomen. It was associated with a smaller, similar mass in the left lower area of the abdomen. On the basis of the pelvic examination the masses were considered to be associated with the ovaries. There were a distinct fluid wave and shifting dullness. The liver and spleen were not considered to be enlarged.

A complete blood count and urinalysis gave normal findings. The blood urea nitrogen was within normal limits, and the liver profile gave normal values for the alkaline phosphatase, bromsulfalein, glutamic oxaloacetic transaminase, total bilirubin, and proteins. A paracentesis yielded serosanguineous effusion fluid with malignant cells.

Roentgenograms of the chest showed dextrocardia (figure 1), and those of the upper gastrointestinal region also showed the duodenum to be positioned to the left of the stomach, in mirror image (figure 2). The right-sided positioned stomach was found to be rigid and contracted; there was a loss of the usual motility, and a normal rugal pattern was absent. No discrete ulcerations were noted. A cholecystogram showed the gallbladder to be located on the left side of the abdomen. There was no evidence of stones or a filling defect. The shadow of a barium enema also in the situs inversus position showed upper displacement of the colon and the sigmoid on the right side of the pelvis, with a noticeable displacement by the large pelvic mass. Intravenous pyelogram showed normal functioning kidneys with no ureter or bladder abnormalities except for a slight deviation of the ureters.

Flexible fiber-optic gastroscopy of the transposed stomach showed a rigid nonpliable stomach charac-

* Head of the Gastroenterology Branch, Medical Service, United States Naval Hospital, National Naval Medical Center, Bethesda, Md. 20014.

† Staff member, Gastroenterology Branch, Medical Service, United States Naval Hospital.

teristic of linitis plastica. It was impossible to insufflate the stomach with air because of its unyielding leather-bottle state. Usual peristaltic motility was lacking. The overlying mucosa had a ground-glass, pale pink appearance with no ulcerations. Exfoliative gastric cytology was normal. The basal and stimulated acid output found in gastric secretory studies were normal.

The preoperative diagnosis was gastric carcinoma with metastasis and malignant ascites.

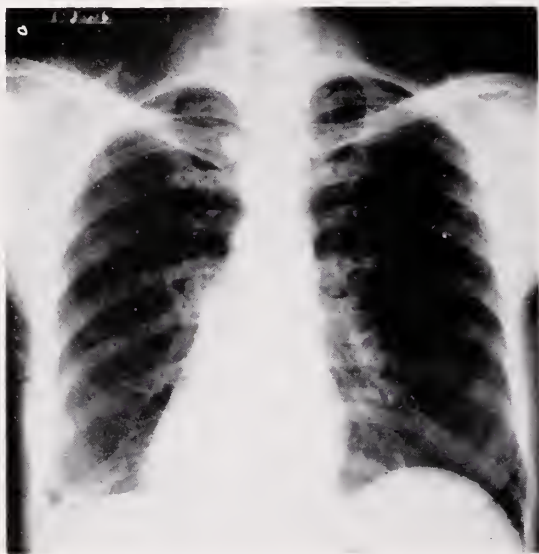


FIG. 1. Dextrocardia.

Ascitic fluid measuring 8,000 c.c. was removed at an exploratory laparotomy. Affixed to the posterior wall of the pelvis were 2 large masses associated with the ovaries and represented Krukenberg metastases to the ovaries. Several small metastatic lesions were in the pelvis, but in the remainder of the abdomen, including the omentum, no tumor showed grossly. On further exploration of the upper abdominal area infiltrative carcinoma was found to extend from the esophageal-cardiac junction of the stomach distally to the first portion of the duodenum, a pattern typical of linitis plastica. Thick nodes were found all along the lesser curvature. Nodal tissue removed for biopsy showed carcinoma.

During the procedure for a panhysterectomy the ovarian masses were excised completely.

Postoperatively the clinical course was uncomplicated. The patient was able to eat without difficulty, and her appetite was fair. Three months after the surgical operation both ascites and pleural effusion developed and required several courses of chemotherapy, thoracentesis, and paracentesis. She has maintained her strength and weight and tolerates frequent small meals without dysphagia.

Discussion

The term linitis plastica was coined by William Brinton⁴ in 1859 to describe a diffuse thickening of

the walls of the stomach, accompanied by a diminution in its capacity. The prognosis was uniformly fatal, with an insidious onset and a slowly progressive cachexia. Contemporary usage of the term is largely restricted to a fibroblastic response of the stomach in a type of diffuse carcinoma, but frequently even a meticulous search reveals no evidence of cancer cells. The diagnosis must often be made in retrospect after the discovery of carcinoma in an adjacent organ or lymph node. Special stains for mucinous-producing cells within the desmoplastic response may also be diagnostic. Conditions other than gastric carcinoma have caused a similar fibrous proliferation. These include gastric sarcoma, leukemia, Hodgkin's disease, and the diffuse fibrotic type of gastric syphilis.⁵



FIG. 2. Right-positioned stomach with duodenum to the left. The stiff and contracted stomach is typical of linitis plastica.

Pathology. The entire stomach or merely a small area may be involved, with a thickening of the wall up to 2 or 3 cm. in certain instances.⁶ The most common location is the pylorus and prepyloric region, and the lesion seems to progress slowly upward to merge gradually into normal stomach tissue. The cardia is the least involved. On sectioning, the stomach wall is gristly and hard. Classically, the mucosa is smoothed out, flattened, and fused with the underlying wall. The normal fine texture of gastric mucosa is absent,

and the mobility of the mucosa is lost. Shallow ulcerations are often present.

Microscopically there is no correlation between the gross form of this tumor and the histologic type. The mucosa may appear completely normal, or it may be absent or markedly degenerated. Usually the tumor growth is undifferentiated in pattern and there is a massive desmoplastic reaction in the submucosa. Fibrous tissue often comprises most of the thickness of the wall, and only scattered isolated tumor cells, or a few nests of tumor cells, are found. A dense round-cell infiltration may be seen. The connective tissue fibers pass through all layers radially, surrounding blood vessels and interlacing one another. In the muscularis mucosa there are varying degrees of atrophy, depending on the proliferation of connective tissue, which may extend to the serosa.

Metastatic processes often involve the ovary, and intra-abdominal metastasis by carcinoma of the stomach is well known. Krukenberg⁷ first described bilateral ovarian neoplasms that appear as large, solid, grey-white tumors composed of a fibromyxomatous stroma throughout which were scattered mucin-secreting signet ring cells. He conceived of these tumors as primary neoplasms and called them "fibrosarcoma ovarii mucocellulare (cârcinomatodes)." Subsequently, it was realized that this tumor was in reality metastatic from another source, usually the stomach, but the method of spread has not yet been elucidated. Peritoneal sedimentation, lymphatic and hematogenous routes of spread have all had their proponents. It is most important to realize that ovarian tumors, sometimes of large size, may be the presenting feature of a small, symptomless gastric carcinoma.

Clinical features. The symptoms of linitis plastica are a progressive diminishing of stomach capacity associated with gradual failure of nutrition, usually over a period of 1 to 2 years. Common symptoms are anorexia and early satiety while eating. Weight loss is usually obvious by the time the patient is seen by a physician, and cachexia, anemia, and malnutrition are apparent.

Diagnosis is based on the study of roentgenograms. Pathognomonic findings are a smooth, rigid, contracted stomach with slight stasis of barium in the lower level of the esophagus and a dilated duodenal loop and cap. Rapid emptying is noted, and normal peristalsis is absent. Gastric analysis often shows achlorhydria. Gastric exfoliative cytologic examination is rarely positive for malignant cells. Gastroscopy is valuable and complements the roentgenologic findings.

Linitis plastica must be assumed to be malignant, and an abdominal exploratory surgical operation must be performed. A kind of linitis plastica that responds to treatment is that caused by the diffuse fibrotic type of gastric syphilis. Serologic tests and an even more gradual course are helpful in distinguishing this type of lesion which, more often, will prove to be carcinoma, and total gastrectomy becomes the procedure of choice.

Gastric carcinoma associated with total situs inversus must be a rare occurrence. The true incidence of situs inversus in the population is difficult to determine because it is uncommon and its frequency can be studied only in certain selected groups, such as in the military population, in routine physical examinations. LeWald⁸ reported an incidence between 1 in 1,000 and 1 in 35,000 (0.003 per cent) in routine Army physical examinations, and 1 in 5,000 (0.02 per cent) determined at necropsy. The true incidence is probably 1 in 10,000. The mirror image transposition of organs can be total or partial and may affect various organ systems. Isolated organ transposition is usually seen as dextrocardia, and in some instances the stomach or the gallbladder may be the only organ found to be transposed. The genetic aspects of this malformation are not well understood. Some forms of situs inversus may be inherited as a recessive trait, a theory which is supported by the fact that in a few rare instances siblings have also been found to have situs inversus. This developmental anomaly is also considered to occur in utero and to be associated with other congenital defects.

There has been no evidence to indicate that situs inversus in any way constitutes a premalignant state. The occurrence of gastric carcinoma with metastases in our patient who had complete situs inversus most likely is a coincidence. More attention, however, should be directed to the other intra-abdominal anomalies that have frequently been found to accompany situs inversus. The fact that complex malformations of the heart have been well known in associations with various forms of visceral transformation has been well established, but the accompanying visceral complications should be emphasized. Intra-abdominal malformations were reported in a significantly high percentage of cases with complete situs inversus by Fonkalstrud et al.⁹ They found that 15 of 37 cases had significant intra-abdominal malformations, contrasted with only 2 of 37 patients with isolated dextrocardia. Over four-fifths of the intra-abdominal malformations found

with situs inversus were found to be surgically correctable. Some of these complications involving the gastrointestinal tract included atresia or stenosis of the duodenum or jejunum, incomplete fixation of the bowel mesentery, and atresia of the bile ducts. Gastrointestinal roentgenograms, particularly of infants known to have situs inversus, are important for an early diagnosis and treatment to prevent complications.

Summary

A rare occurrence of gastric carcinoma which was growing in a patient with complete situs inversus was first discovered because of an ovarian mass. Metastases to the ovaries, bilaterally, from the primary gastric lesion resulted in the classical Krukenberg tumor. The gastric lesion had all the roentgenologic and gross pathologic characteristics of linitis plastica. The clinical, gastroscopic, and pathologic features of this type of gastric neoplasm have been discussed.

Gastric carcinoma occurring in complete situs inversus is a rare coincidence. Situs inversus, however, should in no way be considered a premalignant state. Associated intra-abdominal malformations, on the other hand, are common in infants with complete situs inversus. Early diagnostic studies, including extensive roentgenograms of the gastrointestinal tract, have been emphasized for prompt and accurate diagnosis and early treatment and prevention of untoward complications.

ACKNOWLEDGMENT is made to Frances H. Atkinson, B.A., R.R.L., for technical editing.

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Acromioclavicular Joint Injuries—Debevoise and Brown

(Continued from page 214)

Summary

Acromioclavicular joint injuries have been discussed in terms of simple sprains, subluxations, and dislocations. A method of restoration of normal anatomy and function following dislocation of the acromioclavicular joint has been presented in which the coraco-acromial ligament is transplanted to the clavicle to replace the disrupted coracoclavicular ligament with the reduction of the acromioclavicular joint being maintained by a Kirschner wire.

ACKNOWLEDGMENT is made to Frances H. Atkinson, B.A., R.R.L., for technical editing.

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In the hypotonic duodenograph^{1,2} reproduced above, the gastrointestinal tract was relaxed with Pro-Banthine. The duodenum was intubated. Pro-Banthine in a dose of 60 mg. intramuscularly was used to assure prompt aperistalsis and double-contrast visualization was achieved with ordinary barium and air.

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Contraindications: Glaucoma or severe cardiac disease.

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tancy may occur in elderly males with prostatic hypertrophy, this should be watched for in such patients until they have gained some experience with the drug. Although never reported, theoretically a curare-like action may occur with possible loss of voluntary muscle control. Such patients should receive prompt and continuing artificial respiration until the drug effect has been exhausted.

Side Effects: The more common side effects, in order of incidence, are xerostomia, mydriasis, hesitancy of urination and gastric fullness.

Dosage: The maximal tolerated dosage is usually the most effective. For most *adult* patients this will be four to six 15-mg. tablets daily in divided doses. In severe conditions as many as two tablets four to six times daily may be required. Pro-Banthine (brand of propantheline bromide) is supplied as tablets of 15 mg., as prolonged-acting tablets of 30 mg. and, for parenteral use, as serum-type vials of 30 mg. The parenteral dose should be adjusted to the patient's requirement and may be up to 30 mg. or more every six hours, intramuscularly or intravenously.

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SEARLE

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Precautions: Until patient’s response has been determined, he should be cautioned against engaging in operations requiring alertness. Administer with care

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President's Page

COMPREHENSIVE HEALTH PLANNING BY THE GOVERNMENT



In 1966 Congress declared in P.L. 89-749 that Federal financial assistance should be employed in support of the amalgamation of all health resources in the country to assure high quality medical services for every individual citizen. These services are to be marshalled at all levels, national, state, regional and local, but without interference with existing patterns of private practice of medicine, dentistry and related healing arts. For this purpose the law authorizes the Surgeon General, from July 1, 1966 to June 30, 1972, to make grants to states and also to regional, metropolitan or local areas which have submitted and have had approved by him plans for comprehensive health planning. In the fiscal year 1967 an appropriation of \$2.5

million is authorized, in 1968 \$5 million, and in 1969 and 1970, \$10 million.

Of even greater importance is the fact that the law authorizes the appropriation of \$100 million for 1968 and \$125 million annually for 1969 and 1970 for grants to public or nonprofit private agencies to cover part of the cost of providing HEALTH SERVICES or stimulating and supporting new programs of health enterprises. These grants can only be made if services are provided in accordance with plans developed under the program for comprehensive health planning. Such services would include the establishment of health clinics, partially or wholly financed through government funds.

The importance of P.L. 89-749 cannot be overestimated. In the District of Columbia (as a state) the Department of Public Health has already been designated as the agency for administering the health planning functions under the law. However, it is anticipated that for the Washington Metropolitan Area the Metropolitan Council of Governments will be recognized as the administering and supervising agency. It is essential that the Medical Society of the District of Columbia as well as surrounding County Medical Societies have medical representation on the regional planning council, which will also include lay and consumer members. This council is now in the planning stage. Only by influencing Congress to limit expenditures, informing our membership of the existence of this law, and participating in its implementation can we as practicing physicians retain a partial control over the explosive entrance of the Federal Government into American medicine.

William S. McLure



Diabetes Detection Week—April 28–May 5

THE WEEK OF APRIL 28–MAY 5 could be of life-saving importance to approximately 15,000 residents of the Metropolitan Washington Area who have diabetes and do not know it. During this period the Diabetes Association of the District of Columbia will launch its annual and biggest campaign to make the community conscious of the presence of diabetes. This disease, which far outranks poliomyelitis and multiple sclerosis in the number of persons affected, approximately 4,000,000, ranks eighth among the causes of death and is the third most common cause of blindness in this country. This year the Diabetes Association will distribute 140,000 test kits. Based on the national testing experience, between 1 and 2 per cent of those who will be tested will show sugar in their urine, and the majority of these will be persons who previously did not know that they had diabetes.

Big business has come to appreciate the importance of maintaining good health among their employees, and the early recognition of diabetes means better health and greater efficiency for these previously unknown diabetics. This year the following business organizations will actively support the drive by making the urine tests available to their employees: Chesapeake and Potomac Telephone Company, Equitable Life Insurance Company, George Washington University (fac-

ulty), National Geographic Society, Potomac Electric Power Company, Washington Gas Light Company, and The Washington Post. The D.C. Metropolitan Police and Fire Stations, Public Libraries, and the stores of Drug Fair will be distributing depots for the test kits, and test kits will also be distributed from the lobby of the D.C. Medical Society Building. The D.C. Public Schools will send letters to the parents of school-children concerning the Detection Drive.

Mayor Walter E. Washington will issue a proclamation designating April 28–May 4 as Diabetes Detection Week in the District of Columbia. He and other prominent persons will be heard on radio and television. Members of the Lay and Clinical Societies of the Diabetes Association of the District of Columbia will also be interviewed over these media.

The Diabetes Association is fortunate in again having Mr. Thomas W. Wilson, Chairman of the Lay Society, head the Detection Drive Committee. Last year Mr. Wilson and his associates waged the most effective local campaign on record, resulting in the discovery of over 300 previously unknown diabetics.

MAX G. SHERER, M.D.

President, Diabetes Association of the District of Columbia

D. C. Cancer Register

CANCER IS A REPORTABLE DISEASE in the District of Columbia since 1952 as required by a Commissioners' Order. A report, which is confidential, should be submitted by you, the physician, to the D.C. Department of Public Health at the time you first see a cancer patient or establish the diagnosis. Copies of the reporting form (see opp. page) and answers to your questions on cancer reporting can be had by calling the Department's

Central Cancer Register on 629-3197. Forms are also available at hospital tumor registries.

Cancer is a major health problem in the District of Columbia. The second most frequent cause of death, cancer causes about 1,500 deaths a year among D.C. residents. Over 5,000 new cases are diagnosed every year by D.C. physicians. Of these 5,000 new cases, approximately 2,800 are D.C. residents and the D.C. Department of Public

Opinions expressed in contributions to the Editorial Section are those of the writers and do not necessarily reflect the views of the Medical Society of the District of Columbia

CONFIDENTIAL REPORT OF CANCER
(Report each Primary Neoplasm on a separate form)

Identifying Information	1. PATIENT'S SURNAME First Middle Marden				2. Do Not Write in This Space	
	3. Address			4. Birth Date:	5. Sex: ☐ M ☐ F	6. Race: ☐ White ☐ Negro ☐ Other
	7. Marital Status: 1. ☐ Married 2. ☐ Sep., Div. 3. ☐ Widow(er) 4. ☐ Never Married				8. Social Security No.	
Hospital Data	9. Hospital:	10. Pt's Record No.	11. Name of spouse:	12. Date of Admission	13. Date of Discharge	
	14. Type of Facility Used: 1. ☐ Private room 2. ☐ Semi-private 3. ☐ Ward 4. ☐ Clinic 5. ☐ Tumor Board Review					
Past History	15. Was first diagnosis this cancer made elsewhere? ☐ Yes Date _____ ☐ No ☐ Unknown					
	If "Yes" (a) Name and address of M.D. or hospital: _____					
	(b) Primary site and type: _____					
	(c) Confirmed microscopically? ☐ Yes ☐ No ☐ Unknown Treatment given? ☐ Yes ☐ No ☐ Unknown					
If treated elsewhere give date: _____ and type of treatment: _____						
Diagnosed by Time First Diagnosed by Reporting Source	16. Date first diagnosed by this M.D. or facility: _____ Primary Site: _____					
	Type: _____					
	17. Metastatic sites: _____					
	18. Basis of Diagnosis: 0. ☐ Clinical only 1. ☐ Exfoliative 2. ☐ Histology 4. ☐ X-ray 8. ☐ Autopsy ☐ Other					
19. Histological Diagnosis (Pathology Report most pertinent to staging): _____						
20. Stage of Disease (check one): 1. ☐ In situ (Pre-invasive Localized) 2. ☐ Localized Other 3. ☐ Regional 4. ☐ Remote or Disseminated 5. ☐ Studies to confirm not completed 6. ☐ Not recorded Unknown						
Management—Treatment	21. (a) Date patient was last seen: _____ (b) Has case been reviewed by Tumor Board? ☐ Yes ☐ No					
	(c) CANCER DIRECTED TREATMENT			(d) Supportive Therapy		
	1. ☐ Surgery (Complete or partial removal of Tumor Excluding Biopsy)			1. ☐ Surgery (By-pass, as colostomy, vasectomy, chordotomy, removal of fluid etc.)		
	2. ☐ Radiation—Beam			2. ☐ Blood transfusion (for leukemia and other)		
	3. ☐ Radiation—Other			3. ☐ Other (such as anastomoses, plastic surgery or catheterization)		
4. ☐ Chemotherapy			Note: Do not report under either (c) or (d) diagnostic procedures such as exploratory surgery, autopsy, or D & C.			
5. ☐ Steroid/Hormones						
6. ☐ Other (specify) _____						
7. ☐ No treatment (reason): ☐ Inoperable ☐ Refused ☐ Other reasons						
Present Condition	22. 1. ☐ Alive—No clinical evidence of cancer 2. ☐ Alive—cancer still present 3. ☐ Dead Date _____ and place death was recorded _____					
	City _____ State _____ 4. ☐ Present condition unknown					
Source of this report.	23.(a) Reported by: 1. ☐ Hospital Register 2. ☐ Hospital 3. ☐ Clinic 4. ☐ Physician 5. ☐ Pathologist 6. ☐ Radiologist					
	Name _____ Address _____ Date _____					
(b) Should a request for a follow up report be sent to same as above? ☐ Yes ☐ No If "No" give: Name: _____ and Address: _____						

27 Send original copy of this report to: **CENTRAL CANCER REGISTER, D. C. DEPARTMENT OF PUBLIC HEALTH**
300 Indiana Avenue, N. W., Washington, D. C. 20001

Health estimates there are now over 4,000 D.C. residents under treatment or observation for cancer.

Prompt, complete, and accurate reporting by you on your cancer patients will contribute to the fight against cancer. The data compiled by the D.C. Central Cancer Register are used to promote better patient management, in planning and eval-

uating cancer control efforts, to develop educational material for medical and paramedical personnel and for the public, and as a base for epidemiologic investigations and clinical research.

The Medical Society of the District of Columbia and the D.C. Department of Public Health therefore urge each of you to comply with the cancer reporting requirement.

The Challenge of the Regional Medical Program*

AS A CONSEQUENCE of the increasing tempo of medical research, life expectancy continues to advance. Older people need more medical care. Likewise, new discoveries often require many additional man-hours on the part of physicians, nurses, and technologists. The failure of health education to expand at the same rate as research has thus led to progressive lengthening of the time lag between the development of new knowledge and its application to the medical care of the general public.

The major purpose of the Regional Medical Program is to narrow this gap. There is a possibility that this program may fail either because of the mutual lack of confidence between the profession and the Federal Government or as a consequence of "town and gown" bickering. Such a failure will lead to a further demand on the part of many segments of the public for a national health service analogous to that existing in most other countries. Should such pressures be successful, the death knell of private practice will have been sounded, and the net result will probably be a decline in the average standard of medical care.

Outstanding success of the Regional Medical Program will have the opposite effect. Such success will demonstrate that a cooperative effort on the part of the profession, the medical schools, the Government, and the public can plug existing gaps in our generally good system of private practice.

As of the present time no one knows which policies and procedures are most likely to be conducive to success in this new venture. Therefore, it is highly desirable that during the initial years there be a maximal opportunity for each designated region to develop its own plan. Any attempt from Washington to dictate uniformity will hamper the diversity that is essential at present if valid answers are to be obtained.

In my view, the objectives of the Regional Medical Program can best be realized if under-

graduate medical education is being conducted in the same hospitals that have continuing programs of medical refreshment for practicing physicians.

At the risk of shocking many of my academic friends, I venture the prediction that one of the keys, and perhaps the most important one, to the success of the Regional Medical Program is the fourth-year medical student. His presence in the daughter and, ultimately, in the granddaughter centers, will offer multiple advantages. He will provide a potent stimulus to practicing physicians to increase their efforts to keep abreast of the latest scientific advances. Because he will be able to function as a junior intern in small hospitals that now have none, he will elevate the standards of patient care. He will be instantly available for emergency aid to the nurses or the technologists who are meeting the routine responsibilities in coronary and other intensive care units. Even more importantly, the presence of 2 or more medical students in a community hospital affiliated with the medical school will markedly increase the attractiveness of such an institution to full-time members of the faculty and enhance the likelihood that able young teachers will be willing to accept appointments there.

These statements are based on personal experience during the past year at a small hospital 75 miles distant from our medical school. The opportunity for close and warm personal association for a few months with 2 to 4 medical students has been one of the most gratifying experiences of my own professional life. Perhaps the wish is father to the thought, but I have hoped that such an association provided the teacher with a chance to build men as well as to train physicians. But the crucial question remains: Does an elective assignment of this type when the student might otherwise choose to work at the parent medical center impair his education? If so, the experiment should be abandoned because even the benefits cited above do not justify second-class medical education.

* Reprinted by permission from HARRISON, T. R.: *Ann. Intern. Med.*, 1968, 68, 245.

Those students who have been the guinea pigs in our experiment believe that their gain has exceeded their loss. They consider that the types of patients seen are more analogous to those they will subsequently encounter in practice than are the patients they see in the University and Veterans Administration Hospitals in Birmingham. They say that the absence of interns increases their own opportunity for decisions, which the doctors usually accept but are free to veto. They learn from the practicing physicians certain practical points that they do not learn at their home base. Because of the smallness of the group mutual discussions and debates are encouraged, and they learn from each other. The lack of ready consultation from the various subspecialists is partly compensated for by the resulting greater stimulus to read and find the answers for themselves. But the students are in unanimous agreement that the presence of a full-time teacher who is primarily concerned with education rather than with practice is essential if this venture is to succeed.

As well as I can judge, opinions among our own faculty are divided. Most of those who have visited our experiment and participated in the teaching have thought that the student gains more than he loses. But some of my ablest colleagues hold the opposite view. And I suspect that most of those who have not directly participated believe that any one who considers decentralization of medical education to be desirable is sadly in need of a psychiatrist. It is my hope that these differences of opinion may be resolved by a detailed practical oral examination involving patients and comparing the X (experimental) students who have had this unorthodox type of training with an otherwise equal Y (control) group. Plans for such a comparison to be conducted by a group of "blind" examiners, who do not know which students are X and which are Y, are now being formulated. The important point is the realization that an inconclusive result—which is what I anticipate—of such a test will be important. Since there is no doubt that the patients and the practicing physicians are benefited, a demonstration that the students' education is bettered is unnecessary. But it is essential that we learn whether there is any significant detectable impairment. If so, the experiment should be discontinued. Thus, rigid evaluations, both immediate and long-range, of the students and of the program are the crux of the matter.

There is no intention here of suggesting that students should be "farmed out" without super-

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IN SPITE OF PRECAUTIONS printed on the package, an anxious student took the contents of an entire box of Somnux® (18 tablets) to "get a good night's sleep." He became progressively more confused in speech and thought. His behavior appeared disorganized and inappropriate. He developed a typical atropine psychosis, which cleared rapidly. Somnux contains scopolamine. It is not a harmless medication, although it is sold over the counter. Somnux overdosage should be considered as a possible etiologic factor in acute psychotic reactions.

COMMITTEE ON PROBLEMS OF
DRUG DEPENDENCE

Washington Psychiatric Society

N. B. The Committee would appreciate it if members of the D. C. Medical Society will comment on or relate their experiences concerning problems of drug abuse or misuse.

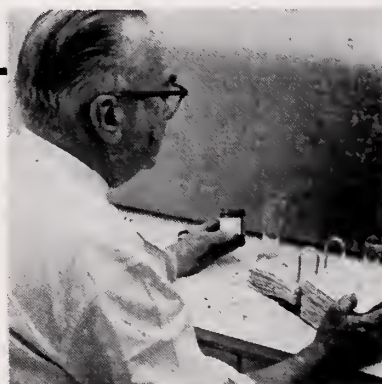
vision as a means of facilitating the Regional Medical Program. The Program will provide the schools with funds for securing additional full-time faculty personnel to provide the needed supervision and also to aid the doctors in keeping abreast of expanding medical knowledge. That the Program is aimed primarily at "heart, stroke, cancer, and related disorders" is no serious handicap because this language embraces most of internal medicine.

Possibly the faculties of some schools will look on these ideas as fanciful and radical. Actually, they are as old as Hippocrates, who believed that good medical practice was inseparable from medical education. In my opinion, medical students markedly facilitate postgraduate education. In any case, it will be interesting to compare, a decade hence, the progress, success, or failure of those regional programs that function without medical students with those programs conducted under the aegis of schools, if any, that are willing to decentralize the student during a small fraction of his educational period. My own wager is on the side of "the boys."

TINSLEY R. HARRISON, M.D.
*Department of Medicine,
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PEOPLES

PRESCRIPTION DRUG STORES

Preliminary Report of the Ad Hoc Colon and Rectal Cancer Study of the Medical Society of the District of Columbia

THE SIGMOID COLON and Rectal Cancer Study began in April, 1966 when the President of the Medical Society of the District of Columbia, by action of the Executive Board, appointed a committee to survey these disease states in Washington, D. C. hospitals. This committee is the successor to the Cancer Morbidity Review Committee which reviewed gynecologic malignant lesions from January, 1958 to June 1, 1963.

The present Colon and Rectal Cancer Study Committee functions with the aid of a grant from the American Cancer Society, District of Columbia Division, Inc.

The objectives of the study are educational. Efforts are made:

1. To evaluate the quality of diagnosis and treatment of rectal and colon cancer by physicians in the major District of Columbia hospitals.

2. To evaluate the need for increased public education in recognizing the symptoms of colon and rectal cancer.

3. To educate physicians by the discussion of various procedures carried out and by the exchange of ideas in the management of patients with these tumors.

Members of the Committee have been selected with the objective of securing a broad-based representation of all participating hospitals in the Washington area. Selection was also based on specialty interests. Surgeons, gastroenterologists, internists, radiologists and pathologists are members of the review panel.

The following hospitals are participating in this study: Columbia Hospital for Women, D. C. General, Doctors, Freedmen's, Georgetown University, George Washington University, Providence, Sibley, Morris Cafritz Memorial, and the Washington Hospital Center. Participation by these hospitals has been authorized by their respective Executive Boards. Blanket permission to review the hospital records of patients with colon and rectal cancer was given by the hospitals; however, permission from the private physician is always obtained before a review is made of the medical records of each of his patients.

A professional case worker abstracts the hospital records of new patients with cancer of these sites. Pertinent data are then abstracted from both clinical and pathology records. In addition, the responsible physician is contacted and requested to forward any other pertinent information he may have on the case under consideration. This

includes a review of the history, examination, diagnostic procedures, treatment, and the dates of referral to the hospital or to another physician for final diagnosis. Thus, an accurate record of each patient is obtained. A transcript of the complete case presentation is mailed to the attending physician and to all involved physicians, prior to the case meeting, for corrections or additions.

All physicians are invited to attend the monthly case meetings of the Committee. In particular, physicians associated with a specific case under discussion are urged to attend. With such participation the educational merits of the meeting are enhanced. The hospital, physician and patient are not identified in the abstract or during the case discussion. A variety of cases is presented at each of these meetings and in each case every effort is made to bring out interesting diagnostic and therapeutic facets.

From May 1, 1966 to October 31, 1967, 334 cases of sigmoid colon and rectal cancer were abstracted from 9 participating hospitals. This preliminary report concerns 314 cases. The Committee is awaiting additional information from physicians on 20 cases.

Summary of Findings

Private patients numbered 257 and staff patients, 57. The age and sex distribution is shown in table 1.

TABLE 1: Age and Sex Distribution

Age Range	Female	Male
20-30 years	1	1
31-40 years	5	1
41-50 years	20	10
51-60 years	34	48
61-70 years	45	46
71-80 years	44	27
Over 80 years	21	11
TOTAL NO. PATIENTS	170	144

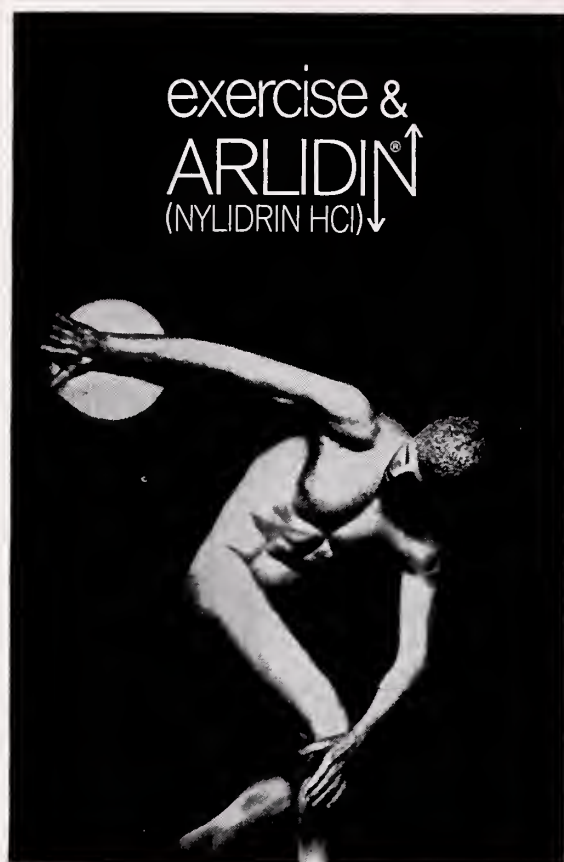
Pathologic diagnoses of surgical specimens* were established as follows¹:

* Dukes' A—Involvement of a portion of the muscularis.

Dukes' B—Involvement of the entire thickness of the muscularis.

Dukes' C—Regional lymph node involvement.

¹ CUTHBERT, E. DUKES: Classification of cancer of the rectum. *J. Path. Bact.*, 1932, 35, 323.



Adenocarcinoma of the rectum:

- Dukes A—19
- Dukes B—44
- Dukes C—35

Adenocarcinoma of the rectosigmoid:

- Dukes A— 3
- Dukes B—15
- Dukes C—15

Adenocarcinoma of the sigmoid colon:

- Dukes A—19
- Dukes B—59
- Dukes C—65

Miscellaneous pathologic diagnoses included:

Squamous-cell carcinoma of the anus	6
Carcinoid tumor of the rectum	4
In situ carcinoma in a polyp	2
Cloacogenic carcinoma	1
Adenocarcinoma of the anorectal junction	2
Leiomyosarcoma	1

Twenty-four patients did not have surgery for the following reasons:

Inoperable	12
Poor surgical risk	9
Refused surgery	3

The time interval between onset of symptoms and the patient's first medical consultation was as follows:

1 day—4 weeks	88
1—3 months	75
3—6 months	63
6—12 months	22
Over 1 year	19

In 25 patients a diagnosis of carcinoma was made on routine physical examination which included sigmoidoscopy of asymptomatic individuals. In 22 additional patients the diagnosis was made on routine sigmoidoscopy performed in hospitals for patients who had been admitted for other causes.

The time interval between the first consultation of symptomatic patients with physicians and the establishment of diagnoses was as follows:

1 day to 4 weeks	186
5 weeks to 2 months	12
3 to 6 months	20
8 months	1
1 year	3
Over 1 year	3

The diagnostic procedures by first physician consulted follow:

Rectal digital, sigmoidoscopy, barium enema, and referral	112
Rectal digital, sigmoidoscopy, and referral	28
Rectal digital, barium enema, and referral	13
Rectal digital, and referral	37
Rectal digital, no referral	6
Vaginal examination and referral	1

Seventeen physicians did not perform any type of examination but referred the patient to a second physician for examination. In 14 patients the physician consulted initially could not be identified. The second physician in these cases made an immediate diagnosis. In 11 instances the physicians concerned have not answered letters asking for complete information. Twenty-eight of the 57 staff patients did not consult a private physician before their visit to a clinic or admission to a hospital.

Recommendations

It is evident that there is a need for greater public education as evidenced by the delay in seeking medical advice after significant symptoms become apparent. Over 50 per cent of the patients waited more than 1 month between the onset of

symptoms and their first medical consultation. As can be ascertained from the data shown there is also room for improvement in physician performance, although the majority of the patients were promptly diagnosed and treated. It is encouraging that considerable attention is being given to routine sigmoidoscopy as testified by the fact that 47 patients were diagnosed in a pre-symptomatic stage.

The Committee endorses rectal examination and sigmoidoscopy on asymptomatic patients as part of a yearly physical examination, especially on patients aged 40 and over. A rectal digital examination, sigmoidoscopy, and barium enema should be done on all symptomatic patients. All tissue removed at hemorrhoidectomy should be submitted to the pathologist for microscopic examination to lessen the possibility of missing a carcinoma.

The Committee welcomes and encourages participation in this study so that all may benefit by an exchange of experience in the early diagnosis and treatment of cancer of the colon and rectum. The Committee also is appreciative of the financial support given by the American Cancer Society, D. C. Division, Inc. to carry on this professional education project.

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► HEALTH DEPARTMENT NOTES

Tuberculosis Control in D.C.

AN ANNUAL REPORT released half a century ago by the Health Officer of the District of Columbia contained statistics about tuberculosis. The rate of newly-reported cases of tuberculosis in fiscal year 1917 was 294.7 per 100,000 population, and the mortality rate from this disease was 203.6 per 100,000. As a comparison, Washington's 1966 rate of newly-reported cases was 69 per 100,000 and the mortality rate, 12.7 per 100,000 population.

To control tuberculosis the D. C. Department of Public Health carries on a 3-part program: (1) measures designed to prevent tuberculosis; (2) detection of individuals who have tuberculosis; and (3) epidemiological investigation and treatment.

The Department's Health Education and Information Division conducts an educational program to provide District residents with information about the prevention of tuberculosis. Films and pamphlets are distributed throughout the city. Informational releases are disseminated to local newspapers, radio and TV stations, explaining how people can protect themselves from tuberculosis, listing detection centers, and setting forth the treatment facilities available to those who have tuberculosis.

Health educators meet with community groups, explaining the need for good health practices, proper diet, and suitable environment as factors in preventing tuberculosis. They speak and lead seminars at meetings of adult and student groups.

The Health Information and Referral Center at 815 Ninth Street, N.W., provides information or refers individuals to the source of information on any aspect of the tuberculosis problem. The telephone number at the Center is 629-3776.

The Health Department has a tuberculosis detection program which uses a variety of approaches. Probably the most familiar to District residents is the Mobile X-ray Unit, usually located in one of the city's areas where the tuberculosis incidence is high. Other chest X-ray facilities are located at Northwest Central Clinic, 1325 Upshur Street, N.W.; Southwest Health Center, Delaware Avenue and I Street, S.W.; and at the Employment Security Building, Sixth Street and Pennsylvania Avenue, N.W.

The multiphasic screening program for individ-



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uals 40 years of age and older also includes a chest X-ray. Health screening tests are given at the Southwest Health Center and in a mobile unit.

Last December a program was started at D. C. General Hospital to provide chest X-rays to all patients seen in the Admitting Office or Emergency Unit. Those excluded in this program are pregnant women, minors under 18 years old, and critical emergency cases.

More than 10,000 school administrators, teachers and other employees of D. C. public and parochial schools are given chest X-rays through Health Department facilities at 3-year intervals. The last survey was completed in June 1967.

A program of tuberculin skin testing was begun last fall for the District's 30,000 children in kindergarten and first grades of both public and parochial schools. Jet injector guns are used in these tests. Each child with a positive reaction will be given a chest X-ray. In addition, Health Department personnel will interview members of the child's family and other close associates to whom skin tests will be available. It is expected that for each positive reactor at least 6 other persons will be tested for tuberculosis. A positive reaction to a skin test for any of these people will lead to a chest X-ray in an all-out effort to find the source of infection.

Skin tests also are given at the Northwest Central Clinic, Southwest Health Center, and the Well-Baby Clinics.

The Health Department maintains a chemoprophylaxis center at 1332 10th Street, N.W., where it carries out the Child Center Program and close supervision and follow-up of contacts of new active cases. As a preventive, isoniazid is recommended for a period of 12 months to infected individuals, with priority to: (1) persons with inactive tuberculosis, who have never been treated with drugs, or who have had inadequate treatment; (2) contacts of persons found to have active tuberculosis; (3) tuberculin converters; (4) children with positive tuberculin tests and who are entering school; and (5) teenagers with positive tuberculin tests.

Extensive tests by the U. S. Public Health Service show that chemoprophylaxis may be expected to reduce tuberculosis incidence in high-risk groups by at least 60 per cent over a period of 5 years. It may well assist in achieving a downward trend of this disease in Washington.

The Northwest Central Chest Clinic gives examinations, diagnosis, and treatment for tuberculosis, chest X-rays, and tuberculin tests. In addition to serving as the outpatient chest clinic, it

serves as a central unit for much of the other tuberculosis activity within the Health Department.

Chest X-rays taken in all other Health Department facilities are interpreted at Northwest Central Clinic where, in fiscal year 1967, 126,981 such films were read. The Clinic itself took 52,493 chest X-rays in that year.

The tuberculosis case register, which carried 3,633 names followed up by the Department as of June 30, 1967, is maintained at Northwest Central Chest Clinic. In addition, personnel there collect and maintain other basic data for record and statistical purposes and for control of patients lapsed from medication.

The Department of Public Health maintains Glenn Dale Hospital, a 600-bed hospital in suburban Maryland, where hospital care is provided for residents of the District who have tuberculosis and other chronic diseases. During fiscal year 1967 a total of 501 tuberculous patients were admitted to Glenn Dale Hospital, with an average daily census of 316.

The Hospital has among its objectives reduction and prevention of disease and disability from tuberculosis, provision of comprehensive care and treatment for patients requiring hospitalization, and continued research and investigation concerning tuberculosis and other chronic diseases.

MURRAY GRANT, M.D., D.P.H.
D.C. Director of Public Health

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KENT A. PETERSON, M.D.

► NEW MEMBERS

Active

RODNEY V. HOYLE, M.D. Office: 5185 MacArthur Boulevard, N.W. Born in Wenatchee, Washington. Medical degree: University of Utah, 1962. Specialty: Ophthalmology.

HOWARD IRWIN LEVINE, M.D. Office: 1234 19th Street, N.W. Born in Brooklyn, N.Y. Medical degree: New York State University, 1960. Specialty: Internal Medicine (Rheumatology).

HILDEGARD WESSEL MANITSAS, M.D. Office: 901 23rd Street, N.W. Born in Geseke, Germany. Medical degree: Humboldt and Free University of Berlin, 1951. Specialty: Anesthesiology.

ANDREW MENGES MARGILETH, M.D. Office: 2125 13th Street, N.W. Born in Cincinnati, Ohio. Medical

degree: University of Cincinnati, 1947. Specialty: Pediatrics.

JOHN LLOYD MARLOW, M.D. Office: 2425 L Street, N.W. Born in Blackfoot, Idaho. Medical degree: George Washington University, 1961. Specialty: Obstetrics and Gynecology.

ROBERT AUSTIN MILCH, M.D. Office: Executive Office of the President of the United States. Born in New York City. Medical degree: Columbia University College of Physicians and Surgeons, 1953. Specialty: Orthopedic Surgery (Administration).

FRANK MARK MOSCARILLO, M.D. Office: 2650 Virginia Avenue, N.W. Born in Torrington, Conn. Medical degree: Georgetown University, 1961. Specialty: Psychiatry.

MAX P. ROGERS, M.D. Office: 915 19th Street, N.W. Born in Burlington, N.C. Medical degree: Duke University, 1942. Specialty: General Surgery.

JEROME LEWIS SANDLER, M.D. Office: 106 Irving Street, N.W. Born in Washington, D.C. Medical degree: Jefferson Medical College, 1958. Specialty: General Surgery.

RONALD W. SMITH, M.D. Office: 2121 Pennsylvania Avenue, N.W. Born in Wilkes-Barre, Pa. Medical degree: George Washington University, 1957. Specialty: Obstetrics and Gynecology.

Associate

ROBERT WILLIAM RABBITT, M.D. Office: 6600 Bellerest Road, Hyattsville, Md. Born in Washington, D.C. Medical degree: George Washington University, 1963. Specialty: Obstetrics and Gynecology.

CHANDRAKANT FULABHAI AMIN, M.D. Office: Hudson River State Hospital, Poughkeepsie, N.Y. Born in Tarapur, India. Medical degree: Gujarat University, India, 1961. Specialty: Psychiatry.

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DEV RAJ CHITKARA, M.D. Office: D.C. General Hospital. Born in West Punjab, India. Medical degree: All-India Institute of Medical Sciences, New Delhi, 1960. Specialty: Otolaryngology.

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Cardiac Transplantation in Man

A Statement by the Board on Medicine, National Academy of Sciences*

PROGRESS IN MEDICINE depends largely on the cautious extension to man of a body of carefully integrated knowledge derived from programs of basic and developmental research in the laboratory. Extension to man is itself an investigative process that must meet the same meticulous scientific standards that obtain in the laboratory, and the extension can appropriately be started only when the total body of knowledge has reached a certain point. It is clear that this point has been reached in the case of cardiac transplantation.

Careful, detailed laboratory investigations in a number of centers have demonstrated the feasibility of a surgical technique for cardiac transplantation. With the skillful use of immunosuppressive agents investigators have succeeded in maintaining the life of laboratory animals subjected to cardiac transplants for periods up to a year or more. Moreover, considerable relevant knowledge has been acquired from carefully controlled clinical investigations involving the transplantation of a kidney in a human being.

But, in contrast to the transplant of a paired organ of man such as the kidney, cardiac transplantation raises new, complex issues that must be faced promptly. In the case of a kidney transplant the donation of the organ is not crucial to the donor; in the event of failure the recipient may be kept alive for extended periods until another attempt is made. In the case of cardiac transplantation the life of the donor cannot be maintained. Further, the recipient's life cannot be salvaged if the transplanted heart does not function. Highly important is the fact that the length of time that the recipient can survive is as yet conjectural, even if the immediate result is favorable as indicated by prompt resumption of function by the transplanted heart. Thus the procedure cannot as yet be regarded as an accepted form of therapy, even an heroic one. It must be clearly viewed for what it is—a scientific exploration of the unknown, only the very first step of which is the actual surgical

feat of transplanting the organ. In this connection it is clear that there are considerably more institutions whose staffs include men with the surgical expertise appropriate for the first step of the investigation—the actual transplantation—than have available the full capability to conduct the total study in terms of all relevant scientific observations.

Because of these special circumstances it is the considered view of the Board on Medicine of the National Academy of Sciences that, for the present, cardiac transplantation should only be carried out in those institutions in which all of the following criteria can be met:

1. The surgical team should have had extensive laboratory experience in cardiac transplantation and should have demonstrated not only technical competence but a thorough understanding of the biological processes that threaten functional survival of the transplant, i.e., rejection and its control. Investigators skilled in immunology, including tissue typing and the management of immunosuppressive procedures, should be readily available as collaborators in the transplantation effort.

2. As in any other scientific investigation the overall plan of study should be carefully recorded in advance and arrangements made to continue the systematic observations throughout the whole lifetime of the recipient. The conduct of such studies should be within an organized framework of information exchange and analyses. This would permit prompt access by other investigators to the full positive and negative results. Thus the continued care of each recipient would be assured the continuing benefit of the most up-to-date information. Such an organized communication network would also permit the findings to be integrated with the work of others and assist in the planning of further investigative efforts. In this way it would be possible to ensure that progress will be deliberate and that the experience from each individual case will make its full contribution to the planning of the next.

3. Since the procedure is a scientific investigation and not as yet an accepted form of therapy, the primary justification for this activity in respect to both the donor and recipient is that from the study will come new knowledge of benefit to others in our society. The ethical issues involved in the selection of donor and recipient are a part of the whole complex question of the ethics of human

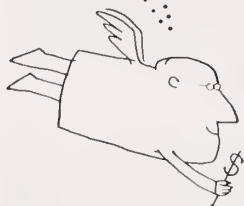
* This statement, which proposes a set of guidelines on the undertaking of heart transplants, was released for publication, February 28, 1968. The Board on Medicine, formed by the Academy in November 1967 to study the social functions of medicine, is composed of representatives of both medical and nonmedical fields. Its Chairman is Dr. Walsh McDermott, Professor of Public Health and Chairman of the Department of Public Health, Cornell University Medical College. Dr. Dwight L. Wilbur, President-elect of the American Medical Association, is a member of the Board.

Been sued for a king's ransom lately?

(Save this ad. You may need it tomorrow if you don't today.)

The St. Paul "Top Brass" Policy is for people like you who, by profession, are vulnerable to heavy liability judgments. Not every insurance company offers this kind of policy; few cover so broadly.

You can now increase your Professional (and personal) Liability coverage by as much as \$5,000,000. And you get extra "major medical" coverage in most cases at no extra cost.



Now our brochure about this policy is printed on what appears to be solid mahogany. The thought of wasting one of these brochures makes our thrifty souls twitch. (The same thrift which has kept us so solvent these 114 years.) So only if you feel you really need our "Top Brass" brochure . . . write for one.

(How efficient are you? Unload your entire bundle of insurance detail on one pair of knowledgeable shoulders: a St. Paul agent or broker. Write or call.)



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Serving you around the world . . . around the clock

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experimentation. This extremely sensitive and complicated subject is now under intensive study by a number of well-qualified groups in this country and abroad. Pending the further development of ethical guidelines it behooves each institution in which a cardiac transplantation is to be conducted to assure itself that it has protected the interests of all parties involved to the fullest possible extent.

Rigid safeguards should be developed with respect to the selection of prospective donors and the selection of prospective recipients. An independent group of expert, mature physicians, none of whom is directly engaged in the transplantation effort, should examine the prospective donor. They should agree and record their unanimous opinion as to the donor's acceptability on the basis of the evidence of crucial and irreversible bodily damage and imminent death. Similarly the prospective recipient should be examined by an independent group of competent physicians and clinical scientists including a cardiologist and an expert in

immunology. In this instance the consulting group should also record their opinion as to the acceptability of the recipient for transplantation on the basis of all the evidence including the presence of far-advanced, irreversible cardiac damage and the likelihood of benefit from the procedure.

* * * * *

Enumeration of the above criteria is based on the conviction that in order to obtain the scientific information necessary for the next phase in this form of organ transplantation only a relatively small number of careful investigations involving cardiac transplantation need be done at this time. Therefore, the Board strongly urges that institutions, even though well equipped from the standpoint of surgical expertise and facilities but without specific capabilities to conduct the whole range of scientific observations involved in the total study, resist the temptation to approve the performance of the surgical procedure until there has been an opportunity for the total situation to be clarified by intensive and closely integrated study.

New Hazards of Chemicals and Drugs to Children

A Statement of the Subcommittee on Accidental Poisoning of the American Academy of Pediatrics

THE FOLLOWING chemicals and drugs constitute a serious hazard to children and pediatricians should warn their patients concerning them:

Fluorocarbon 12. This volatile liquid has been widely used as a refrigerant and aerosol propellant. Since it leaves no toxic residue on evaporation it recently has been used as a "glass chiller" to produce frosted cocktail glasses. The recent death in Greenwich, Connecticut, of an 11-year-old girl who inhaled fluorocarbon 12 vapor from a balloon points up the danger that can occur if this usually innocuous substance is mishandled.

Fluorocarbon 12 is a mild intoxicant, but it can kill by suffocation if inhaled in the absence of oxygen, or by cold damage to the larynx if aspirated in liquid form.

All possible publicity as to the potential dangers of inhaling this or any other substance for intoxicative effects is urged.

Stramonium "asthma powders." A stramonium-containing powder for the treatment of asthma which is to be burned (or smoked) and the smoke

inhaled by the patient can become a dangerous substance if misused. A teen-age Connecticut boy was severely poisoned after ingesting 2 teaspoonfuls of the powder in an attempt to get "high." Physicians should be aware that this and similar substances may be used in psychedelic experiments.

"Big Aspirin." Claiming prolonged effectiveness (dose-related), several brands of 600 mg. acetylsalicylic acid tablets may soon be marketed again. These are considered to represent twice the poisoning hazard of the familiar 300 mg. tablet. The Subcommittee on Accidental Poisoning would like documented reports of any poisonings (not ingestions) by these "double-size" tablets. They should be sent to the Headquarters of the Academy of Pediatrics at 1801 Hinman Avenue, Evanston, Ill. 60204.

ALLAN B. COLEMAN, M.D.
Chairman, Subcommittee
on Accidental Poisoning



helps restore normal motility and tone

CANTIL[®] (mepenzolate bromide)

Diarrhea and other symptoms of common G.I. disorders can often be curbed with Cantil (mepenzolate bromide), bringing welcome relief to the harassed patient. Relatively specific for the hyperactive colon, it helps reduce diarrhea, pain and spasm with minimal effect on other viscera. Cantil (mepenzolate bromide) is indicated whenever these symptoms are associated with irritable colon, gastroenteritis, diverticulitis, and mild to moderate ulcerative colitis.

It is an anticholinergic drug without narcotic properties. Side effects are usually mild.

CONTRAINDICATIONS: Sensitivity to Cantil[®] (mepenzolate bromide), glaucoma, G.I. or G.U. obstruction, toxic megacolon. **WARNINGS:** Possibility of adverse reactions in advanced severe ulcerative colitis and atypical agitated reactions to phenobarbital in the elderly (Cantil with Phenobarbital). **PRECAUTIONS:** Cantil is of adjunctive use only; treatment of the underlying condition is indicated, be it organic or functional. Observe caution in conditions known to be incompatible with atropine-like drugs, e.g., open-angle glaucoma or prostatic hypertrophy. **ADVERSE EFFECTS:** Dry mouth; blurred vision; constipation; nausea; vomiting; bloating; dizziness; urinary retention. All are anticholinergic effects and usually tolerable. Habituation and idiosyncratic reactions to phenobarbital (Cantil with Phenobarbital) are possible, as is generalized rash. **DOSAGE:** One or two tablets three times a day and one or two at bedtime usually provide prompt relief. Cantil with Phenobarbital may be prescribed if sedation is required. **HOW SUPPLIED:** CANTIL (mepenzolate bromide)—25 mg. per scored tablet. Bottles of 100 and 250. CANTIL with PHENOBARBITAL—containing in each scored tablet 16 mg. phenobarbital (warning: may be habit forming) and 25 mg. mepenzolate bromide. Bottles of 100 and 250.



LAKESIDE LABORATORIES, INC., Milwaukee, Wisconsin 53201

When the emotionally impaired patient pays an office call...

She asks for your help, but just can't seem to follow through on your advice.

When not at your office, she's constantly on the phone: can't sleep, headache, G.I. upset.

She often seeks a physical explanation for her distressing emotional state.

She's excessively apprehensive; demands much more of your nurse's attention.



In moderate to severe anxiety...

- Mellaril helps control the most frequent symptoms: marked tension, agitation, apprehension, restlessness, hypermotility
- Mellaril often alleviates anxiety-induced somatic complaints
- Mellaril frequently helps strengthen emotional resources
- Mellaril helps the patient maintain realistic contact with environment, closer harmony with family

Contraindications: Severely depressed or comatose states from any cause, and in association with or following MAO inhibitors; severe hypertensive or hypotensive heart disease.

Precautions: Hypersensitivity reactions (e.g., leukopenia, agranulocytosis) and convulsive seizures are infrequent. Pigmentary retinopathy has been observed where doses in excess of those recommended were used for long periods of

time. May potentiate central nervous system depressants, atropine, and phosphorus insecticides. Where complete mental alertness is required, administer the drug cautiously and increase dosage gradually. In addition, orthostatic hypotension (especially in female patients) has been observed.

Epinephrine should be avoided in treatment of drug-induced hypotension.

Side Effects: Pseudoparkinsonism and other extrapyramidal disorders are infrequent; drowsiness, especially in high doses early in treatment, may occur; nocturnal confusion, dryness of the mouth, nasal stuffiness, headache, peripheral edema, lactation, galactorrhea, and inhibition of ejaculation are noted on occasion; photosensitivity and other allergic skin reactions may occur but are extremely rare.

for moderate to severe anxiety
Mellaril[®]
(thioridazine)
25 mg. t.i.d.



Before prescribing, see package insert for full product information.

Night Leg Cramps . . . Unwelcome Bedfellow In Diabetes,¹ Arthritis,² and Peripheral Vascular Disorders²

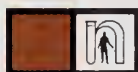


now . . . specific therapy for night leg cramps

Walker

QUINAMMTM

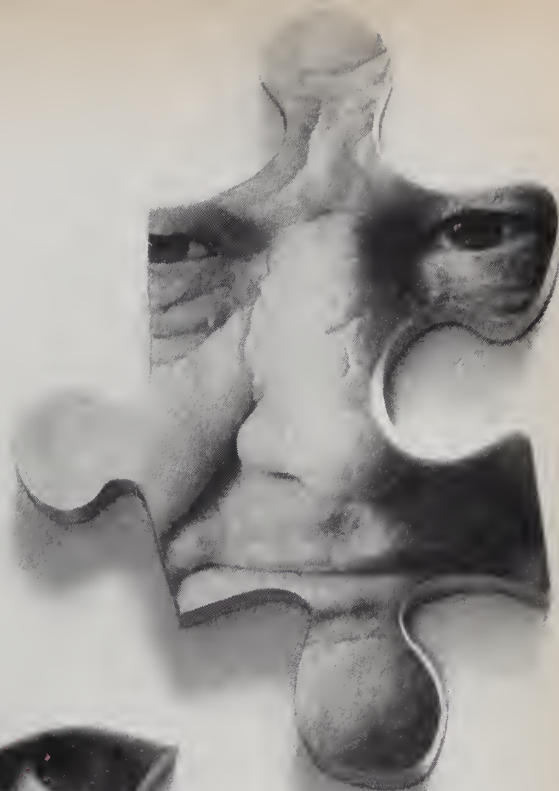
Consistently effective, QUINAMM provided complete relief in 94% of 200 patients studied, many of whom were severe cases refractory to other medication.³ Your prescription for one tablet at bedtime often controls painful night cramps with the initial dose . . . helps restore restful sleep.



THE NATIONAL DRUG COMPANY
DIVISION OF RICHARDSON MERRELL INC
PHILADELPHIA, PENNSYLVANIA 19144

Prescribing Information: **Composition:** Each white, beveled, compressed tablet contains: Quinine Sulfate 260 mg. and Aminophylline 195 mg. **Contraindication:** QUINAMM is contraindicated in pregnancy because of its quinine content. **Precautions:** Aminophylline may produce intestinal cramps in some instances, and quinine may produce symptoms of cinchism, such as tinnitus, dizziness, and gastrointestinal disturbance. Discontinue use if ringing in the ears, deafness, skin rash, or visual disturbances occur. **Dosage:** One tablet upon retiring. Where necessary, dosage may be increased to one tablet following the evening meal and one tablet upon retiring. **Supplied:** Bottles of 100 and 500 tablets. **References:** 1. Shuman, C.: *Am. J. Med. Sci.*, 225:54, 1953. 2. Perchuk, E., et al.: *Angiology*, 12:102, 1961. 3. Rawls, W., et al.: *Med. Times*, 87:818, 1959. 6/67 Q-706A

a puzzle of antacid complaints



"Will this one
taste O.K.?"



Will it help "my
gassy stomach?"

"Will it stop the pain?"

Mylanta®

aluminum and magnesium hydroxide plus simethicone

a solution to peptic ulcer distress

Effective neutralization—

with the two most widely prescribed antacids:
aluminum and magnesium hydroxides.

Concomitant relief of G.I. gas distress—

with the proven¹ defoaming action of simethicone.

Prolonged acceptance confirmed—

in 87.5% of 104 patients after a total of 20,459
documented days of therapy.²

Composition: Each Mylanta chewable tablet or teaspoonful (5 ml.) contains: magnesium hydroxide, 200 mg.; aluminum hydroxide, dried gel, 200 mg.; simethicone, 20 mg.
Dosage: One or two tablets (well chewed or allowed to dissolve in the mouth) or one or two teaspoonfuls to be taken between meals and at bedtime.

References: 1. Hoon, J. R.: Arch. Surg. 93:467 (Sept.) 1966.
2. Danhof, I. E., Personal communication.

Stuart

Division/Pasadena, Calif.
ATLAS CHEMICAL INDUSTRIES, INC.



“The inconvenience of a cold”

For a cold, NTZ® Nasal Spray provides rapid relief of nasal symptoms. Relief starts with the first spray which opens the inferior part of the common meatus. A second spray, a few minutes later, will shrink the turbinates to help provide sinus drainage and ventilation. Dosage may be repeated every three or four hours as needed, for temporary relief of symptoms. NTZ is well tolerated but overdosage should be avoided.

As a sinusitis deterrent, NTZ Nasal Spray can be used to keep the nasal passages open during a cold to help prevent development of acute sinusitis—or to help prevent the acute condition from becoming chronic.

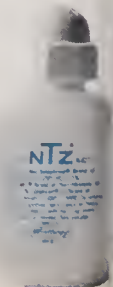
Supplied: NTZ Nasal Spray, plastic squeeze bottles of 20 ml.; NTZ Nasal Solution, bottles of 30 ml. (1 fl. oz.) with dropper.

NTZ is more than a simple vasoconstrictor. It contains **Neo-Synephrine®** (brand of phenylephrine) HCl 0.5 per cent, the major component, virtually synonymous with fast, efficient but gentle nasal vasoconstriction.

Thenfadiil® (brand of thenyldiamine) HCl 0.1 per cent, topical antihistamine for reduction of rhinorrhea, sneezing or itching. It combats the allergic reactions that may occur in colds or sinusitis.

Zephiran® (brand of benzalkonium, as chloride, refined) 1:5000, antiseptic preservative and wetting agent to promote penetration and spread of the formula.

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News & Personals

Summary of Executive Board Actions

Proceedings of February 26 Meeting

Dinner for the Board members was served at 6:30 p.m. in the Exhibit Hall of the Medical Society. Dr. Edward W. Nicklas, Chairman, presided at the meeting. Present were: Drs. William S. McCune, Frank S. Bacon, Jed W. Pearson, Jr., Gudrun Augustin-Rueckert, Paul R. Wilner, Robert J. Coffey, Henry D. Ecker, Raymond T. Holden, John J. Hughes, and Mr. Thomas Sadler, Acting Secretary. Present by invitation were Dr. Victor R. Alfaro and Mr. Warren Magee, Legal Counsel. The meeting was called to order by Dr. Nicklas at 7:20 p.m.

Minutes of the meeting of January 22, 1968 were approved as mailed.

The minutes of the Emergency Meeting of the Executive Board, February 16, called because of the sudden death the preceding day of the Secretary, Mr. George W. Cooley, were read. At that meeting Mr. Sadler was named Acting Executive Director and Acting Secretary-Treasurer of the Society. A committee to select a permanent Executive Director and Secretary-Treasurer was appointed. The minutes were approved as read with one amendment, that Dr. McCune act as Chairman of the above-named committee.

Committee Meetings: The Secretary reported that the following meetings had been held since the last meeting of the Board:

- | | | |
|----------|----|---|
| January | 22 | Committee on Continuing Education |
| | 22 | Obstetric Board |
| | 25 | Committee Chairmen |
| | 30 | Committee on Occupational Health |
| | 31 | Liaison Committee with the Clergy |
| February | 1 | Traffic Committee |
| | 6 | Committee on Child Welfare |
| | 7 | Fee Review Committee |
| | 8 | Board of Credentials |
| | 12 | Committee on Continuing Education |
| | 13 | Committee on Medicolegal Problems |
| | 13 | Committee on Public Information and Education |

- | | |
|----|--|
| 14 | Interdisciplinary Committee on Drug Dependency |
| 16 | Committee on Ruffin Bequest Fund |
| 19 | Obstetric Board |
| 20 | Grievance Committee |
| 21 | Committee on Medical Licensure |
| 26 | Rehabilitation Committee |

Board of Credentials: On recommendation of the Board of Credentials, 10 applicants were elected to Active membership, 2 to Associate membership, and 1 to Resident-Intern membership. Their names appear on page 236. Approval was also given to the following changes in membership status:

Transfers

Active to Associate: Peter D. Comanduras, John H. Hazard, and Michael M. Healy

Reinstatement

Active: Lonis Fettig

Resignations

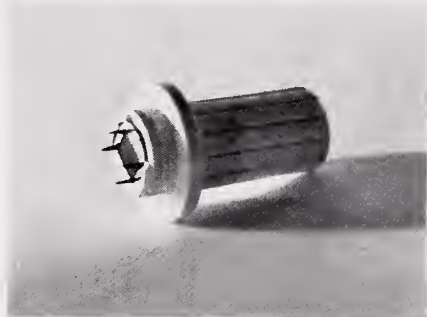
Active: Edwin Lee Child, Arthur J. Levens, and Robert E. Stowell
Associate: Robert Charles Pfeiler and Carolyn H. S. Pincock

Interdisciplinary Committee on Drug Abuse: A memorandum from Dr. Seymour Alpert, Chairman of the Committee, concerning the problems of drug abuse in the District of Columbia, was read by the Secretary. It was agreed that President McCune collaborate with Dr. Alpert on a letter to Mayor Washington and to Dr. Murray Grant suggesting that more money be appropriated and more personnel be involved to assist and treat more than 1,100 people for drug abuse.

Committee on Occupational Health: The Secretary read excerpts from the minutes of the January 30 meeting of the Committee on Occupational Health which requested the formation of an advisory panel. The Board authorized the

To fight TB- find it first!

Make tuberculin testing routine
with every physical examination.



TUBERCULIN, TINE TEST

(Rosenthal)

Side effects are possible but rare: vesiculation, ulceration, or necrosis at test site. Contraindications: none, but use with caution in active tuberculosis. Available in 5's and 25's.



330-8/6135

Committee to obtain consultation from the following groups: Workmen's Compensation carriers, representatives of plaintiff and defense, trade unions, employers' representatives, and Government representatives.

Der-Stepanian Educational Trust Fund:

It was voted that the Medical Society establish and manage an educational trust fund for the family of the late Dr. Oshin Der-Stepanian. Dr. George A. Boinis, Dr. Haikaz Grigorian, and Dr. Babgen Mangasarian were designated trustees for the Fund.

Letter to Commissioner Washington: Dr. McCune read the letter of January 11, 1968 addressed to Mayor Washington offering to him the services of the Society and its 2,400 members in the proposed Health and Welfare Agency specifically and in other projects related to medical care. Since no reply to the January 11 letter had been received, it was voted to send a follow-up letter to Mayor Washington.

Nomination of Senator Lister Hill for AMA Award: For the information of the Board members Dr. McCune read and reviewed the contents of a letter to the Board of Trustees of the American Medical Association concerning the nomination of Senator Hill for the AMA Distinguished Service Award.

Progress Report on Problems of the "Hippies." Dr. McCune reported that Dr. Michael J. Halberstam had been appointed chairman of a committee to review the problems of the "hippies." Dr. McCune stated that the name of the ad hoc committee had been changed to the Committee for Alienated Youth.

Editorial Board Dinner: Dr. Bacon reported on the recent Editorial Board Dinner, noting that there was one significant item proposed, i.e., an extra page in the ANNALS for "current" news.

Regional Medical Program: Dr. McCune described briefly the recent visit of officials of the Regional Medical Program to the National Institutes of Health. He thought the visit was a success and left a good impression. He noted that the chief complaint concerned a need for more lay members on the Advisory Group and also possible representation from ancillary medical services.

Letter from Executive Board to Mrs. Cooley: The letter of February 17, 1968 to Mrs. George W. Cooley was read and incorporated in the minutes.

Other Business

1. Dr. McCune presented a letter from Mr. Charles Suter requesting a general mailing to all members in regard to the Balanced Retirement Plan. The Board agreed with Dr. McCune, that since the Society originally recommended the AMA Retirement Plan and approved co-sponsorship of the Balanced Retirement Plan primarily for those who were not covered elsewhere, a general mailing should not be made at this time.

2. Dr. McCune was authorized to appoint an Ad Hoc Committee on Medical Practice to study area fees and fee structure.

3. The Executive Board endorsed the proposed budget for 1968-69 submitted by the Ad Hoc Colon and Rectal Cancer Study.

4. The Board approved the nomination of Dr. Holden as a candidate for the AMA Board of Trustees and voted its full support and endorsement.

5. The Board authorized publicizing in the Society's Newsletter the continuing need for donations to the Washington Children's Fund, which will provide recreational facilities for underprivileged children at Junior Village and the D. C. Children's Center.

6. Dr. Bacon and Dr. McCune were authorized to represent the Society at the Second National Convention on Socio-Economic Health Care in Chicago on March 22 and 23.

7. The Secretary was instructed to send to Dr.

Warren D. Brill, Chairman of the Committee on Public Information and Education, all material on the forthcoming Third National Conference on Health Education of the Public sponsored by the AMA.

8. The Secretary was instructed to refer to the Committee on Public Information and Education the February 13 letter from the AMA regarding the American Association for Accreditation of Laboratory Animal Care.

There being no further business, the meeting was adjourned at 10:40 p.m.

MEETINGS

A Pediatric Postgraduate Course on Neonatology will be presented at Children's Hospital in Washington, D. C., May 22, 23 and 24. This course is designed to assist the pediatrician in answering questions which confront him daily in the field of neonatology. Distinguished lecturers in this field will include Dr. Mary Ellen Avery, Baltimore; Dr. Heinz Berendes, Bethesda; Dr. Richard Day, New York City; Dr. Heinz Eichenwald, Dallas; Dr. Lula Lubchenko, Denver; Dr. Frank Oski, Philadelphia; and Dr. Sumner Yaffe, Palo Alto, Calif. For information and registration please address: Postgraduate Course, Children's Hospital of the District of Columbia, 2125 - 13th Street, N.W., Washington, D. C. 20009.

Georgetown University School of Medicine will host a **Symposium on Current Concepts in the Etiology and Treatment of Diabetes Mellitus** in the Gorman Auditorium of the Hospital, Friday, May 24. The following program will be presented:

"Mechanism of Action of Insulin," Dr. Rachmiel Levine, New York Medical College

"Diabetes and Exercise," Dr. Maurice S. Goldstein, Medical Research Institute, Michael Reese Hospital, Chicago

"Mechanism of Insulin Secretion," Dr. David M. Kipnis, Washington University Clinical Research Center, St. Louis

"Glucose and Plasma Insulin in Early Diabetes," Dr. Stefan S. Fajans, University of Michigan Medical Center, Ann Arbor

"Microvascular Disease in Diabetes," Dr. Marvin O. Siperstein, University of Texas Southwestern Medical School, Dallas

"Retinopathy and Neuropathy in Diabetes Mellitus," Dr. Richard A. Field, Jefferson Medical College, Philadelphia

Among the discussants will be Drs. Dewitt E. Delawter, James M. Moss and John J. Canary,

of the staff of Georgetown University School of Medicine.

All members of the Medical Society are cordially invited to attend this Symposium. There will be no registration fee.

GENERAL NEWS

The Division of Ophthalmology, Georgetown University, announces a few openings for its 2-year training program for ophthalmic assistants, effective July 1, 1968. The course, which will consist of 4 semesters with 2 weeks' annual vacation, is open to both men and women, ages 20 to 40 years. Applicants must have 2 years of college, or certification as a registered or practical nurse, or 2 years of office experience with sponsorship by a certified ophthalmologist. There is no tuition. Qualified applicants should write for a descriptive brochure and application forms to Dr. P. Y. Evans, Georgetown University Medical Center, Division of Ophthalmology, Washington, D. C. 20007.

The hospital ship S.S. HOPE sailed from Philadelphia, February 29, and was scheduled to arrive in Colombo, Ceylon, April 15. Aboard the ship were hearing aids, diagnostic equipment and accessories, valued at nearly \$50,000, a gift of the National Hearing Society and the hearing aid industry. The ship goes to Ceylon at the invitation of the Ceylonese government and the Ceylonese medical profession. There the HOPE team of 150 physicians, dentists, nurses and technicians will work for 10 months with Ceylonese medical counterparts. Heading the team on arrival in Colombo will be Dr. William B. Walsh, founder and President of Project HOPE. The S.S. HOPE will serve as an affiliated hospital to the medical schools and to the hospitals in Colombo and the inland city of Kandy. This mission marks the ship's first return to Asia since the maiden voyage to Indonesia and South Vietnam in 1960.

George Washington University has received the largest gift in its history from an individual—\$2,000,000 from Walter G. Ross, a Washington businessman and Honorary Trustee of the University. Mr. Ross has pledged the gift for construction of new facilities for the University's Medical Center at Washington Circle on the main University campus.

A \$35,000,000 complex of new buildings will enable the transfer of the entire Medical School from its present location.

THE D. C. DEPARTMENT OF PUBLIC HEALTH
URGENTLY NEEDS

PEDIATRICIANS

for

A Children and Youth Project

This project is to provide professional medical services at new centers for mothers and children

Activities may include Well Baby Clinics, Sick Child Clinics, and work in the School Health Program

- APPLICANTS must be eligible for certification by the American Board of Pediatrics; must be in possession of one medical state license in order to reciprocate with D. C. Department of Public Health
- U. S. CIVIL SERVICE BENEFITS include health and life insurance, paid annual and sick leave, retirement and merit promotion and placement programs. Civil Service Status not required.
- BEGINNING SALARIES range from \$17,953 to \$22,705
- FOR INFORMATION regarding this position call DR. HILARY MILLAR, Washington, D. C. (Area Code 202) 629-4249 or send Application for Federal Employment, Standard Form 57 to: Personnel Division, D. C. Department of Public Health, Room 601, 601 Indiana Avenue, N. W., Washington, D. C. 20001 STOP 25

WHY YOU SHOULD JOIN YOUR
SOCIETY-SPONSORED KEOGH ACT PROGRAM

1. **LOW COST**—Through the group purchasing power of the Medical Society of the District of Columbia, sales and administrative charges are kept at a minimum.
2. **DESIGNED FOR PHYSICIANS**—Includes special features especially desirable for physicians which are not available through other plans.
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4. **SIMPLICITY**—Because the Master Plan has been qualified with the Internal Revenue Service, it is economical and simple for you to participate.

IF YOU WOULD LIKE FULL DETAILS ON HOW A KEOGH ACT PLAN MIGHT WORK OUT FOR YOU PERSONALLY, PLEASE COMPLETE AND RETURN THE COUPON BELOW.

Name _____ Birth Date _____ Sex _____
Address _____ City _____ State _____ Zip _____

- ☐ Please send me an illustration of how a Keogh Act retirement plan might work out for me, based on an annual contribution of \$ _____, which is approximately _____% of my net annual income from private practice. I have _____ full-time employees with more than three years of service, who earn \$ _____ in total per year.
- ☐ I would like more information. Please phone me for an appointment. I can be reached on _____ (Phone number) between the hours of _____.

MAIL TO: Balanced Retirement Plan,
805 Fifteenth Street, N. W., Suite 232,
Washington, D. C. 20005

Telephone: 638-4211

The University is also named recipient of \$1,295,595 from the U. S. Public Health Service to assist in the construction of a medical library. This is part of more than \$6,000,000 in grants to support medical libraries in 6 medical schools in the United States.

Dr. Robert W. Chambers, of Bethesda, Md., has been appointed to the faculty of the Georgetown University Schools of Medicine and Dentistry as Assistant Professor of Pathology, effective July 1. Presently a resident in pathology at the Clinical Center of the National Institutes of Health, Dr. Chambers received his medical degree from Emory University in 1960.

The new Red Cross Research and Development Laboratory at 9312 Old Georgetown Road, Bethesda, Md., was formally dedicated, Sunday, February 18. A 3-story brick building, it was originally designed for a physicians' office building. It contains 21,000 sq. ft. of floor space, more than 5 times the space occupied by the laboratory previously located at National Headquarters in Washington.

The Armed Forces Institute of Pathology will build one of the Nation's unique medical facilities, the only public medical museum in the United States, on the grounds of Walter Reed Army Medical Center. Captain Bruce H. Smith, MC, USN, Director of the Institute, said construction of the wing to the present building is scheduled to begin in March 1968 and is scheduled for occupancy in the spring of 1970. Congress has authorized \$7,500,000 to replace the historic Medical Museum which has stood on the Mall at Seventh Street and Independence Avenue, S.W., since 1887. Groundbreaking for the new wing was held on March 22 on the south side of the Institute.

Forty-fourth Kober Lecture

Gorman Auditorium
Georgetown University Medical Center

Wednesday, April 24, 1968—8:00 P.M.

SPEAKER:

Hyman J. Zimmerman, M.D., F.A.C.P.

Professor of Medicine, George Washington University School of Medicine; Chief of Liver and Metabolic Research, Veterans Administration Hospital, Washington

SUBJECT: "The Spectrum of Hepatotoxicity"

ADMISSION FREE

Members and guests of the Medical Society of the District of Columbia are cordially invited to attend.

The American Medical Association's Division of Socio-Economics has been renamed **Division of Health Service**. Dr. Charles L. Hudson, Past President of the AMA, became the Division's Director in January.

The Honorable John W. Gardner resigned as Secretary of Health, Education, and Welfare, effective March 1. Under Secretary Wilbur J. Cohen was appointed Acting Secretary. Mr. Gardner, who was formerly President of the Carnegie Corporation, will return to the Corporation but will be on loan to the Urban Coalition, an organization which will attempt to solve some of the problems of the cities.

Dr. Karl Menninger, world-renowned psychiatrist, has been appointed the first Distinguished Professor of Psychiatry for the University of Health Sciences/The Chicago Medical School. Dr. Menninger, who now resides in Chicago, will lecture and act in an advisory capacity in psychiatry at the University. Founder and developer of the Menninger Clinic and Menninger Foundation, he serves as senior consultant to the Stone-Brandel Center in Chicago, Chairman of the Board of Trustees of the Menninger Foundation, and Dean of the Menninger School of Psychiatry in Topeka, Kansas.

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is only skin deep*

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► OBITUARIES

Joseph Arthur Jeffries, Jr., M.D.

(1879-1968)

DR. JOSEPH A. JEFFRIES, JR., a Washington obstetrician and general practitioner for 55 years, died, January 5, 1968 at his home at 2900 Connecticut Avenue, N.W.

Dr. Jeffries, a Virginian, was born in Warrenton, February 2, 1879. After graduating from the University of Virginia in 1903, he began private practice in Bristersburg, Va. Later he trained in obstetrics at the Polyclinic Medical School and Hospital in New York City, from 1907 to 1908, and he was house surgeon at St. Bartholomew's Clinic, also in New York City, from 1908 to 1909. He began his practice in the District of Columbia in 1910 and retired in November 1964.

Dr. Jeffries was elected a member of the Medical Society of the District of Columbia in 1913 and became a Life member in 1954. He was a member of the American Medical Association and the University of Virginia Medical Alumni Association.

No members of the immediate family survive. He leaves 2 nieces, Mrs. Helen Jeffries Klitch, of Silver Spring, Md., and Mrs. Camilla Jeffries Patton, of Richmond, Va.

William Preston Haynes, A.B., M.D.

(1900-1967)

DR. W. PRESTON HAYNES, well-known Washington physician who specialized in obstetrics and gynecology, died, December 20, 1967 at Georgetown University Hospital. He had been in ill health for several years.

Dr. Haynes was born in Hopkinsville, Kentucky, May 27, 1900. He came to the District of Columbia in 1917 to attend George Washington University, from which institution he received his undergraduate degree in 1921 and his medical degree in 1924. He interned for a year each at the University Hospital and at Walter Reed General Hospital. He was resident physician in obstetrics and gynecology at New York Lying-in Hospital for 6 months and for a year at Woman's Hospital in New York.

In World War I he served as a private, and from 1928 to 1935 he was a Captain in the Medical Reserve Corps of the Army.

Dr. Haynes was on the teaching staff of George

Washington University from 1928 to 1946 as Associate Professor of Obstetrics. He was associate in obstetrics at old Gallinger Hospital from 1928 to 1933, assistant in obstetrics at Garfield Memorial Hospital from 1928 to 1933, and assistant in obstetrics at Columbia Hospital from 1928 to 1938, when he became Chief of Obstetrics, serving in that capacity for a number of years. He was certified by the American Board of Obstetrics and Gynecology.

Dr. Haynes was an Active member of the Medical Society of the District of Columbia from 1928 until 1966. He was a member of the American Medical Association, a Fellow of the American College of Surgeons and the American College of Obstetrics and Gynecology, a member and former President of the Kober Medical Society, and a member of the Hippocrates-Galen Medical Society and the Washington Gynecological Society.

Surviving him are his wife, Mrs. Frances O'Bryan Haynes, of the home, 5254 North 26th Street, Arlington, Va.; 2 daughters, Mrs. Helen Lueck, of Fredericksburg, Va., and Mrs. Nell Bullock, of Panama City, Fla.; a son, William P. Haynes, of McLean, Va.; a sister, Mrs. Carey Bandy, of Ashland, Ky., and a brother, Dr. Philip Haynes, of Hopkinsville, Ky.

Oshin Der-Stepanian, A.B., M.D.

(1928-1968)

DR. OSHIN DER-STEPANIAN, one of Washington's younger physicians, died suddenly, January 5, 1968 at his home, 3835 Hamilton Street, Hyattsville, Md.

Born in Tabriz, Iran, June 3, 1928, Dr. Der-Stepanian came to the United States as a student in 1948. He received his undergraduate degree from Harvard University in 1952 and 4 years later his medical degree from George Washington University School of Medicine. He interned at Garfield Memorial Hospital for a year and spent 3 years as a resident in internal medicine at the Washington Hospital Center.

Dr. Der-Stepanian opened his private practice in July 1960; his offices were at 740 Sixth Street, N.W. He was a staff member at the Washington Hospital Center.

Elected to Active membership in the Medical Society of the District of Columbia in 1960, he was also a member of the American Medical Association and the Washington Heart Association.

Surviving him are his wife, Mrs. Ada Der-Stepanian, and 3 children, Joanna, Rita and Rima.

Waldo Briggs Moyers, A.B., M.D.

(1900-1967)

DR. WALDO B. MOYERS, an Associate member of the Medical Society of the District of Columbia, died, December 9, 1967 at his home at 6901 Pine-way Street, University Park, Md.

Dr. Moyers was born in Mathias, W. Va., June 17, 1900. After receiving his Bachelor of Arts degree from Bridgewater College, Bridgewater, Va., in 1920, he taught school for several years before deciding to study medicine. He graduated in medicine from the University of Maryland in 1931 and interned for a year at the University Hospital in Baltimore.

During World War I he served as a private in the U. S. Army and in World War II was Chairman of the Selective Service Medical Examining Boards for both Maryland and Prince George's County.

He served on the Board of the County Tuberculosis Association from 1938 to 1945. From 1956 to 1959 he was Chief of Medicine at Prince George's General Hospital. He was a member of the Maryland State Planning Committee, the Board of Directors of the Maryland Medical Care Committee, and the Executive Committee of the Prince George's Poliomyelitis Foundation. He was the first President of the County's Heart Association.

Dr. Moyers had been an Associate member of the D. C. Medical Society since 1942. A diplomate of the American Board of Internal Medicine, he was a Fellow of the American College of Physicians and the American College of Cardiology. He was a member of the American Medical Association, the American Heart Association, the Medical and Chirurgical Faculty of Maryland, and a member and Past President of the Prince George's County Medical Society.

He leaves his wife, Mrs. Elinor Correll Moyers; a son, Deal Moyers, of Richmond, Va.; and 2 sisters, Mrs. Leonard Hollen and Mrs. Clifford Riddell, both of Bridgewater, Va.

Fluoxair—Vacanti, Van Houten and Pollard

(Continued from page 210)

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Treatment of Fat Embolism—Wilson

(Continued from page 216)

of fat embolism was established, and therapy with heparin, alcohol, steroids, antibiotics, digitalis, and oxygen was vigorously pursued. He made a gratifying recovery.

It would seem logical to use no specific therapy if fat embolism is merely suspected on a chest X-ray film without clinical symptoms. Should pulmonary symptoms occur, it would probably be best to start intravenous heparin and alcohol and to oxygenate the patient well, using arterial blood gas analyses as a guide. In the instance of overwhelming fat embolism, as illustrated by the cases reported, the full therapeutic regimen as described may be life-saving.

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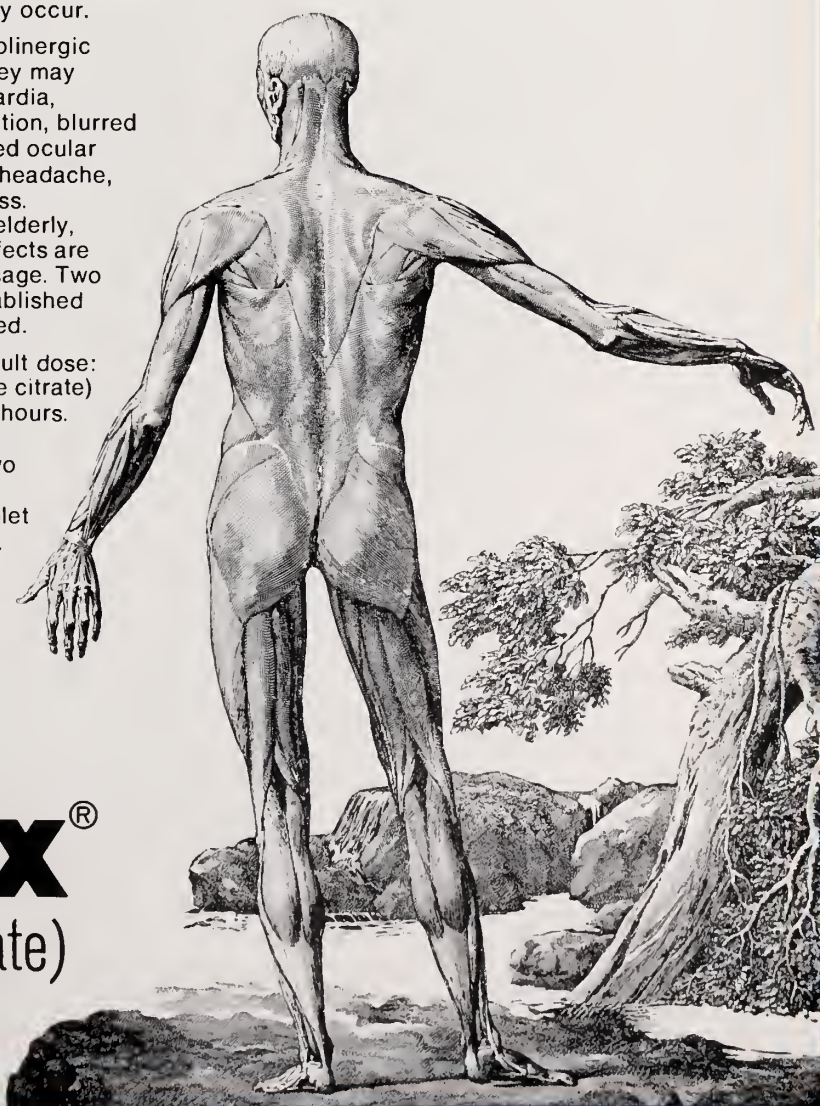
DOSAGE: INJECTABLE — Average adult dose: one ampul, 2 cc. (60 mg. orphenadrine citrate) I.M. or I.V. May be repeated every 12 hours. Relief may be maintained with one NORFLEX tablet b.i.d. **TABLETS** — Two tablets per day for adults, one in the morning, one in the evening. Each tablet contains 100 mg. orphenadrine citrate.

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Contraindications: History of sensitivity to meprobamate.

Important Precautions: Carefully supervise dose and amounts prescribed, especially for patients prone to overdose themselves. Excessive prolonged use has been reported to result in dependence or habituation in susceptible persons, as alcoholics, ex-addicts, and other severe psychoneurotics. After prolonged excessive dosage, reduce dosage gradually to avoid possibly severe withdrawal reactions. Abrupt discontinuance of excessive doses has sometimes resulted in epileptiform seizures.

Warn patients of possible reduced alcohol tolerance, with resultant slowing of reaction time and impairment of judgment and coordination.

Reduce dose if drowsiness, ataxia or visual disturbance occurs; if persistent, patients should not operate vehicles or dangerous machinery.

Side Effects include drowsiness, usually transient; if persistent and associated with ataxia, usually responds to dose reduction; occasionally concomitant CNS stimulants (amphetamine, mephentermine sulfate) are desirable. Allergic or idiosyncratic reactions are rare, but such reactions, sometimes severe, can develop in patients receiving only 1 to 4 doses who have had no previous contact with meprobamate. Previous history of allergy may or may not be related to incidence of reactions. Mild reactions are characterized by itchy urticarial or erythematous maculopapular rash, generalized or confined to groin. Acute nonthrombocytopenic purpura with cutaneous petechiae, ecchymoses, peripheral edema and fever have been reported.

One fatal case of bullous dermatitis following intermittent use of meprobamate with prednisolone has been reported. If allergic reaction occurs, meprobamate should be stopped and not reinstituted. Severe reactions, observed very rarely, include angioneurotic edema, bronchial spasms, fever, fainting spells, hypotensive crises (1 fatal case), anaphylaxis, stomatitis and proctitis (1 case) and hyperthermia. Treat symptomatically as with epinephrine, antihistamine and possibly hydrocortisone. Aplastic anemia (1 fatal case), thrombocytopenic purpura, agranulocytosis and hemolytic anemia have occurred rarely, almost always in presence of known toxic agents. A few cases of leukopenia, usually transient, have been reported on continuous administration.

Meprobamate may sometimes precipitate grand mal attacks in patients susceptible to both grand and petit mal. Extremely large doses can produce rhythmic fast activity in the cortical pattern. Impairment of accommodation and visual acuity has been reported rarely. After excessive dosage for weeks or months, withdraw gradually (1 or 2 weeks) to avoid recurrence of pretreatment symptoms (insomnia, severe anxiety, anorexia). Abrupt discontinuance of excessive doses has sometimes resulted in vomiting, ataxia, tremors, muscle twitching and epileptiform seizures. Prescribe very cautiously and in small amounts for patients with suicidal tendencies. Suicidal attempts have resulted in coma, shock, vasomotor and respiratory collapse and anuria. Excessive doses have resulted in prompt sleep; reduction of blood pressure, pulse and respiratory rates to basal levels; and occasionally hyperventilation. Treat with immediate gastric lavage and appropriate symptomatic therapy. (CNS stimulants and pressor amines as indicated.) Doses above 2400 mg./day are not recommended.

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The nystatin can prevent overgrowth of monilia; the phosphate complex delivers tetracycline to the blood rapidly. Side effects are infrequent.

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Tetrex-F (tetracycline phosphate complex-nystatin) is especially useful in patients most susceptible to fungal overgrowth during tetracycline therapy: (1) the elderly or debilitated, (2) young children, (3) the diabetic, (4) those on long-term tetracycline therapy, (5) those on steroid therapy, (6) those who have had moniliasis before, and (7) pregnant patients with a history of monilial vaginitis.

When you start with economical Tetrex-F (tetracycline phosphate complex-nystatin), you can complete the full course of broad-

spectrum therapy with less chance of losing control elsewhere. A good start for a healthy finish.

PRESCRIBING INFORMATION. For complete information consult Official Package Circular. *Indications:* Infections of respiratory, gastrointestinal and genitourinary tracts and skin and soft tissues due to tetracycline-sensitive organisms, in patients with increased susceptibility to monilial infections. *Contraindications:* The drug is contraindicated in patients hypersensitive to its components. *Warnings:* Photodynamic reactions have been produced by tetracyclines. Natural and artificial sunlight should be avoided during therapy. Stop treatment if skin discomfort occurs. With renal impairment, systemic accumulation and hepatotoxicity may occur. In this situation, lower doses should be used. Tooth staining and enamel hypoplasia may be induced during tooth development (last trimester of pregnancy, neonatal period and childhood). *Precautions:* Bacterial superinfections may occur. Infants may develop increased intracranial pressure with bulging fontanels. In gonorrheal therapy, serologic tests for syphilis should be conducted initially and monthly for 3 months. *Adverse Reactions:* Glossitis, stomatitis, nausea, diarrhea, flatulence, proctitis, vaginitis, dermatitis, and allergic reactions may occur. *Usual Adult Dosage:* 1 capsule q.i.d. Continue for 10 days in Beta-hemolytic streptococcal infections. Administer one hour before or two hours after meals. *Supplied:* Capsules, bottles of 16 and 100. Each capsule contains tetracycline phosphate complex equivalent to 250 mg. tetracycline HCl activity and 250,000 units of nystatin. For Oral Suspension, 125 mg. tetracycline and 125,000 u. nystatin, 5 ml., 60 ml. bottles.

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Enduron provides an excellent starting therapy. Your patient's sodium excretion is greatly enhanced. Yet potassium loss is low.

The therapeutic action is smooth, and persists for a full 24 hours. With Enduron you can prescribe convenient once-a-day dosage without skimping your patients on day-long thiazide effectiveness.

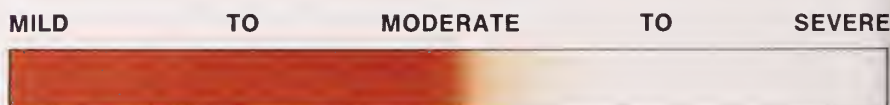
Of course, as with all thiazides, supplemental dietary potassium should also be considered.

Use Enduron as a basic therapy in patients with mild to moderate hypertension. A single 5-mg. tablet each day is ample in most cases.

Once a day, every day

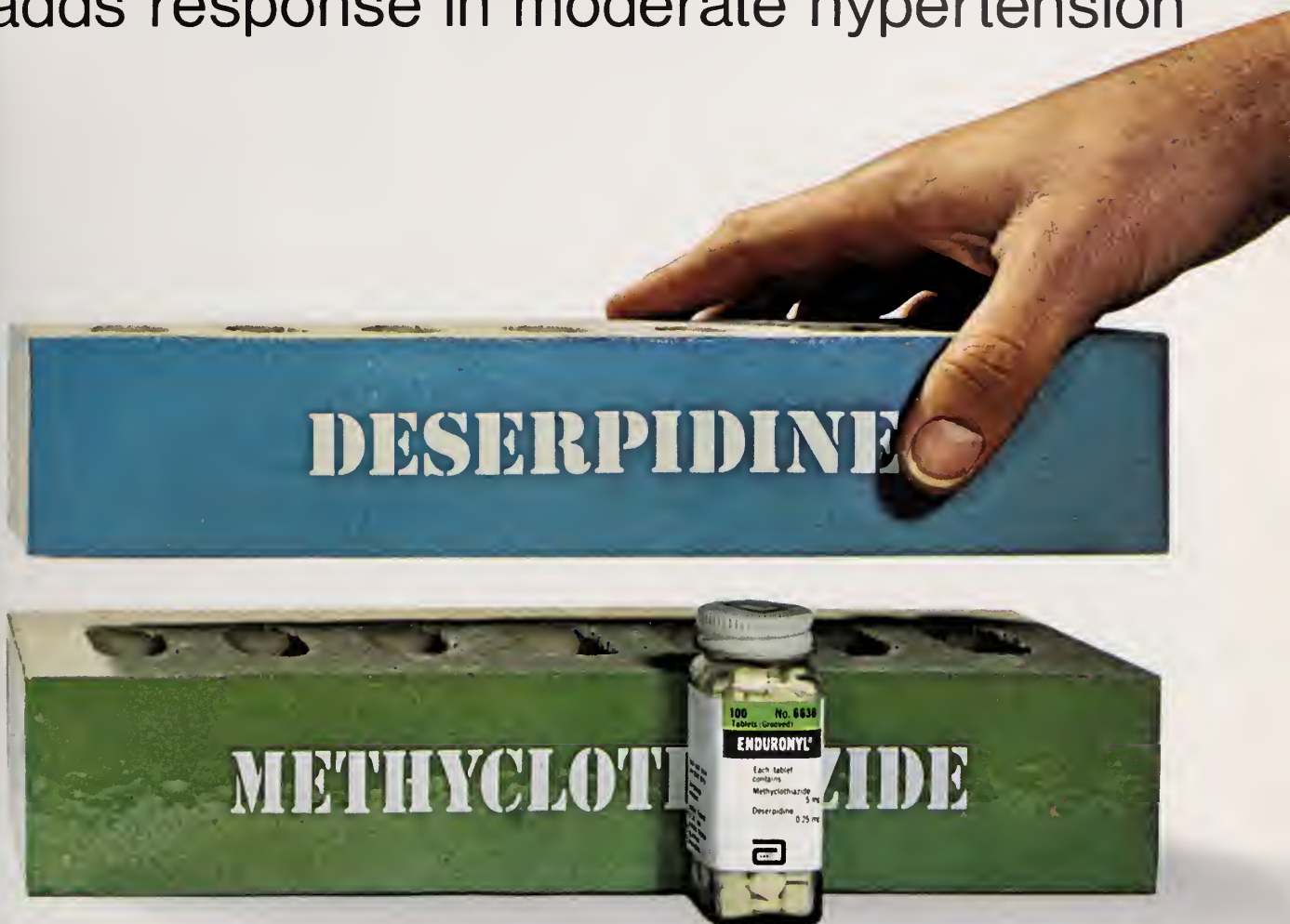
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Enduronyl: Its deserpidine component adds response in moderate hypertension



Less frequent rauwolfia side effects than with reserpine

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Enduronyl adds a building block of *deserpidine*. This is a purified rauwolfia alkaloid available only from Abbott. It adds good antihypertensive and tranquilizing activity. Yet its incidence of untoward effects, particularly lethargy and depression, is lower than with reserpine.

Enduronyl is available plain or Forte. The latter provides its variation where most helpful, by doubling the deserpidine.

Use Enduronyl for patients throughout the broad range of mild to moderately severe hypertension.

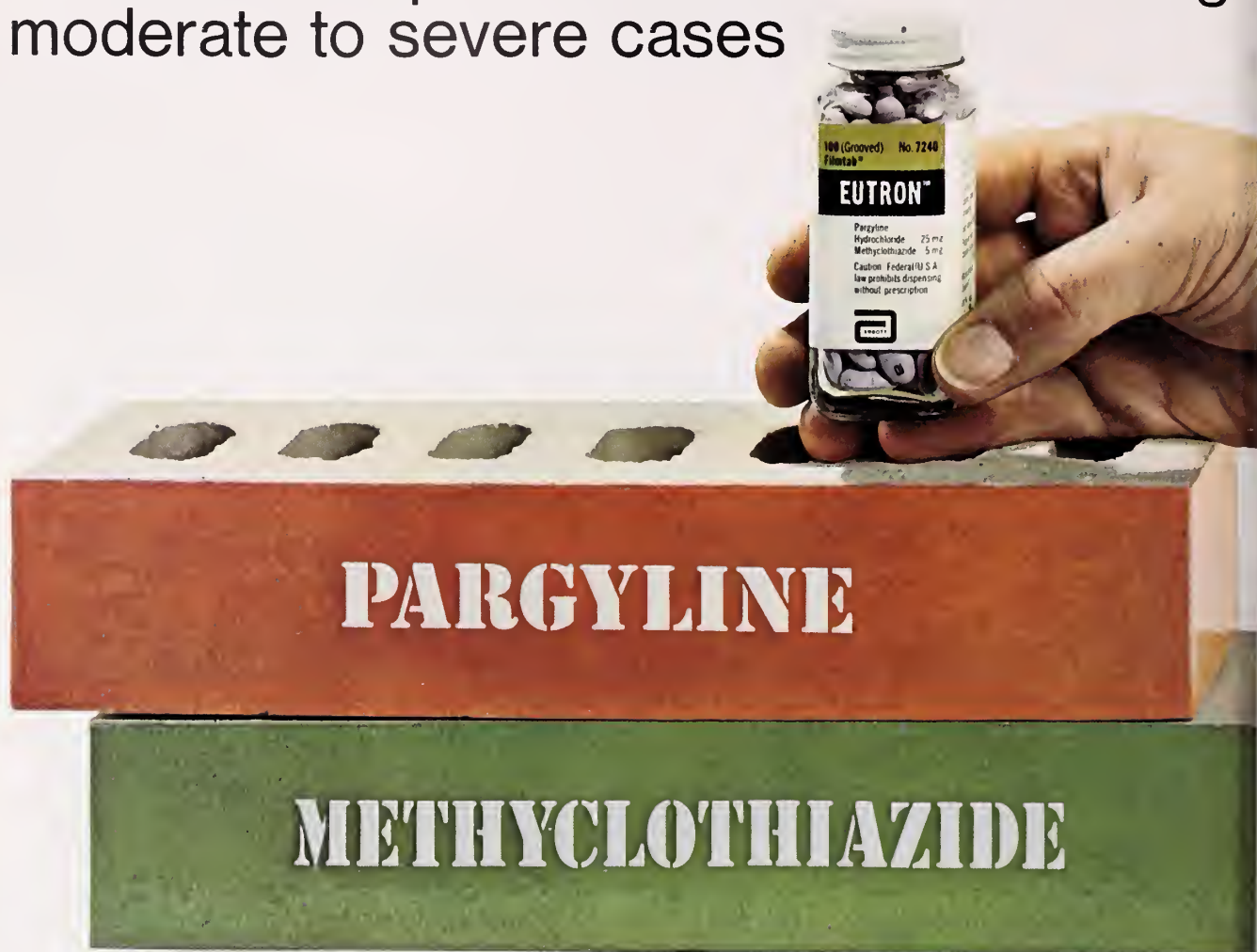
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Eutron lowers diastolic pressures nearly equally, whether your patient is standing up or lying down.

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Each tablet contains
Methyclothiazide 5 mg. with
Deserpidine 0.25 mg. or 0.5 mg.

Indications: Edema and mild to moderate hypertension (Enduron), and mild to moderately severe hypertension (Enduronyl). More potent agents, if added, can be given at reduced dosage.

Contraindications: Sensitivity to thiazides; severe renal disease (except nephrosis) or shutdown; severe hepatic disease or impending hepatic coma (hepatic coma due to hypokalemia has been reported in patients on thiazides). Do not use Enduronyl in severe mental depression, suicidal tendencies, active peptic ulcer, or ulcerative colitis.

Warnings: Consider possible sensitivity where there is history of allergy or asthma. If added potassium is indicated, dietary supplementation is recommended. Reserve enteric-coated potassium tablets for cautious use only when necessary, as they may induce serious or fatal small bowel lesions (stenosis with or without ulceration), cause obstruction, hemorrhage, and perforation often requiring surgery; discontinue them immediately if abdominal pain, distention, nausea, vomiting, or g.i. bleeding occurs. Neither Enduron nor Enduronyl contains added potassium.

Precautions: Use thiazides cautiously in severe renal dysfunction, impaired hepatic function or progressive liver disease; also in pregnancy (bone marrow depression, thrombocytopenia, and altered carbohydrate metabolism have been reported in certain newborn). In surgery, thiazides may reduce response to vasopressors, and increase response to tubocurarine. Antihypertensive response may be enhanced following sympathectomy. Watch for electrolyte imbalance (e.g., hyponatremia) in all patients. In hypokalemia (especially in digitalized patients) give supplemental potassium. In hypochloremic alkalosis, give supplemental chloride.

Use rauwolfias with caution in patients with history of peptic ulcer. Rauwolfias with anesthetics may produce hypotension and bradycardia. Discontinue Enduronyl two weeks before elective surgery. Consider vagal blocking agents during emergency surgery. In epilepsy, adjust anticonvulsant dosage. In electroshock, shorten stimulus strength and duration. In occasional patients with depressive tendencies, rauwolfias may precipitate severe mental depression that usually disappears when drug is stopped.

Adverse Reactions: Thiazide reaction include blood dyscrasias (thrombocytopenia with purpura, agranulocytosis, aplastic anemia); elevation of BUN, serum uric acid or blood sugar; anorexia, nausea, vomiting, diarrhea, headache, dizziness, paresthesia, weakness, skin rash, photosensitivity, jaundice, symptomatic gout, and pancreatitis. Cutaneous vasculitis in the elderly has been reported with other thiazides. Adverse effects with deserpidine are qualitatively similar to those with reserpine, but their incidence is lower. These include nasal stuffiness, abdominal cramps or diarrhea, nausea, headache, weight gain, reduced libido and potency, peptic ulcer aggravation, epistaxis, skin eruption, asthma in susceptible patients, electrolyte imbalance, excessive salivation, and a reversible Parkinson's syndrome. Excessive drowsiness, fatigue, weakness, and nightmares may signal mental depression. Thrombocytopenia, purpura, and a symptom manifested by dull sensorium, deafness, uveitis, glaucoma, and optic atrophy are rare allergic reactions to other rauwolfias. Hypotension from antihypertensive agents may precipitate angina attacks in susceptible individuals. Usually adverse reactions disappear when drug is withdrawn.

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Each tablet contains
Pargyline Hydrochloride 25 mg.
with Methyclothiazide 5 mg.

Indications—Moderate to severe hypertension.

Contraindications—Pheochromocytoma, paranoid schizophrenia, hyperthyroidism and advanced renal failure. Not recommended in malignant hypertension, children under 12, pregnant patients.

Do not use with: centrally or peripherally acting sympathomimetic drugs; foods high in tyramine (e.g., aged and natural cheeses); parenteral reserpine or guanethidine; imipramine, amitriptyline, desipramine, nortriptyline or their analogues; other monoamine oxidase inhib-

itors; methyldopa or dopamine; separate Eutron and these agents by two weeks.

Sensitivity to thiazides; severe renal disease (except nephrosis) or shutdown; severe hepatic disease; impending hepatic coma from thiazide-induced hypokalemia.

Warnings—Patients: 1. No other drugs (particularly "cold preparations" and antihistamines), cheese or alcohol without physician's consent. 2. Promptly report orthostatic symptoms, severe headache, other unusual symptoms. 3. Angina pectoris or coronary artery disease patients must not increase physical activity with improved anginal symptoms or well-being.

Physicians: 1. Use antihistamines, hypnotics, sedatives, tranquilizers and narcotics (meperidine contraindicated) cautiously in reduced doses. 2. Stop Eutron two or more weeks before elective surgery; in emergency surgery reduce premedication (narcotics, sedatives, analgesics, etc.) to 1/4 to 1/5; carefully adjust anesthetic dosage to patient response. 3. Use cautiously in advanced renal failure. 4. Pargyline may induce hypoglycemia. 5. Consider possible sensitivity reactions when a history of allergy or asthma is present. 6. If potassium is indicated, dietary supplement is recommended; enteric-coated potassium tablets may induce serious or fatal small bowel lesions (stenosis with or without ulceration), cause obstruction, hemorrhage, and perforation frequently requiring surgery; discontinue medication immediately if abdominal pain, distention, nausea, vomiting or gastrointestinal bleeding occurs; Eutron does not contain added potassium. 7. Possible systemic lupus erythematosus has been reported for thiazides.

Precautions—Pargyline: Use cautiously at reduced dosage; caffeine, alcohol, antihistamines, barbiturates, chloral hydrate, other hypnotics, sedatives, tranquilizers, narcotics. Periodically do urinalyses, blood counts, liver function tests, etc. Use with caution in liver disease. Watch for orthostatic hypotension, especially in impaired circulation (e.g., angina pectoris, coronary artery disease, cerebral arteriosclerosis); also, augmented hypotension in concomitant febrile illnesses. Reduce or discontinue if hypotension is severe. In impaired renal function watch for cumulative drug effects, elevated BUN and other evidence of progressive renal failure; withdraw drug if these persist. In surgery increased central depressant response (hypotension and increased sedative effect) can be controlled by (1) discontinuing at least two weeks prior; (2) in emergency surgery lowering dose of premedication; (3) when necessary, administering a vasopressor. Do not use in hyperactive and hyperexcitable patients. Pargyline may unmask severe psychotic symptoms where emotional problems pre-exist. Use cautiously in Parkinsonism, especially with antiparkinsonian agents. In prolonged therapy, examine for change in color perception, visual fields, fundi and visual acuity. Also, prolonged therapy has made certain patients refractory to nerve blocking effects of local anesthetics.

Methyclothiazide: Use cautiously in severe renal dysfunction, impaired hepatic function or progressive liver disease; also in pregnancy (bone marrow depression, thrombocytopenia, and altered carbohydrate metabolism have been reported in certain newborn). In surgery thiazide may reduce vasopressor response and increase tubocurarine response. Antihypertensive response may be enhanced following sympathectomy. Watch for electrolyte imbalance (e.g., hyponatremia). Give supplemental chloride if hypochloremic alkalosis occurs and supplemental potassium if hypokalemia occurs (especially in digitalized patients). Thiazides may decrease serum P.B.I. without signs of thyroid disturbance.

Adverse Reactions —Pargyline: Orthostatic hypotension and associated symptoms, mild constipation, fluid retention, edema, dry mouth, sweating, increased appetite, arthralgia, nausea, vomiting, headache, insomnia, difficult in micturition, nightmares, impotence, delayed ejaculation, rash, purpura, weight gain, hyperexcitability, increased neuromuscular activity and other extrapyramidal symptoms. Drug fever is extremely rare. Reduction in blood sugar and hypoglycemic effects are possible. Congestive heart failure has been reported in a few patients with reduced cardiac reserve.

Methyclothiazide: Blood dyscrasias (thrombocytopenia with purpura, agranulocytosis, aplastic anemia); elevation of BUN, blood sugar or serum uric acid (gout may be induced); anorexia, nausea, vomiting, diarrhea, headache, dizziness, paresthesia, weakness, skin rash, photosensitivity, jaundice and pancreatitis. Cutaneous vasculitis in elderly patients has been reported with other thiazides.

If side effects are severe or persist, reduce dosage or withdraw drug.



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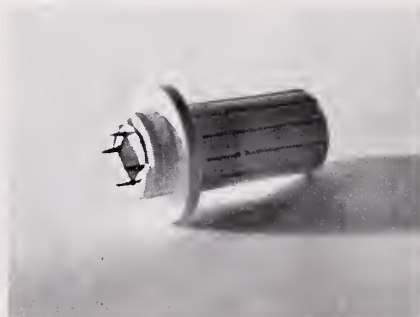
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► NATIONAL & REGIONAL MEETINGS

April 22-27: American Academy of Neurology. Pick-Congress Hotel, Chicago. Address: Mr. Stanley A. Nelson, Executive Director, 4005 West 65th Street, Minneapolis, Minn. 55435.

April 25-28: American Academy of Physical Medicine and Rehabilitation. Sheraton-Chicago, Chicago. Address: Mr. Creston C. Herold, Executive Secretary, 30 North Michigan Avenue, Chicago, Ill. 60602.

April 29-30: Fifth Congress on Environmental Health Problems. Drake Hotel, Chicago. Address: AMA Department of Environmental Health, 535 North Dearborn Street, Chicago, Ill. 60610.

May 4-5: American Federation for Clinical Research. Chalfonte-Haddon Hall, Atlantic City, N. J. Address: Mr. James E. Bryan, Executive Secretary, 2000 P Street, N. W., Washington, D. C. 20036.

May 5-6: American Society for Clinical Investigation. Chalfonte-Haddon Hall, Atlantic City, N. J. Address: Dr. Donald S. Fredrickson, Director, National Heart Institute, Bethesda, Md. 20014.

May 6-9: Aerospace Medical Association. The Americana, Bal Harbour, Fla. Address: Dr. Merrill H. Goodwin, Executive Vice President, Washington National Airport, Washington, D. C. 20001.

May 6-9: American College of Obstetricians and Gynecologists. Palmer House, Chicago. Address: Dr. Michael Newton, Director, 79 West Monroe Street, Chicago, Ill. 60603.

May 11: American College of Psychiatrists. Sheraton-Boston, Boston. Address: Dr. J. Martin Myers, 111 North 49th Street, Philadelphia, Pa. 19139.

May 13-16: American Urological Association. Fontainebleau Hotel, Miami Beach, Fla. Address: Mr. William P. Didusch, Executive Secretary, 1120 North Charles Street, Baltimore, Md. 21201.

May 13-17: American Psychiatric Association. War Memorial Auditorium, Boston. Address: Dr. Robert S. Garber, Executive Secretary, The Carrier Clinic, Belle Mead, N. J. 08502.

May 15-18: American Gastroenterological Association. Bellevue-Stratford Hotel, Philadelphia. Address: Dr. Henry E. Janowitz, Executive Secretary, 1 East 100th Street, New York, N. Y. 10029.

May 19-23: American Thoracic Society. Rice Hotel, Houston. Address: Mr. Frank W. Webster, Executive Secretary, 1780 Broadway, New York, N. Y. 10019.

May 23-25: American Gynecological Society. The Homestead, Hot Springs, Va. Address: Dr. Gordon W. Douglas, Executive Secretary, 550 First Avenue, New York, N. Y. 10016.

May 27-29: American Ophthalmological Society. The Homestead, Hot Springs, Va. Address: Dr. Samuel D. McPherson, Jr., Executive Secretary, 1110 West Main Street, Durham, N. C. 27701.

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T-text



Mr. Lawrence Welk

Learn the seven warning signals of cancer.
You'll be in good company.

1. Unusual bleeding or discharge.
2. A lump or thickening in the breast or elsewhere.
3. A sore that does not heal.
4. Change in bowel or bladder habits.
5. Hoarseness or cough.

6. Indigestion or difficulty in swallowing.

7. Change in a wart or mole.

If a signal lasts longer than two weeks, see your doctor without delay.

It makes sense to know the seven warning signals of cancer.

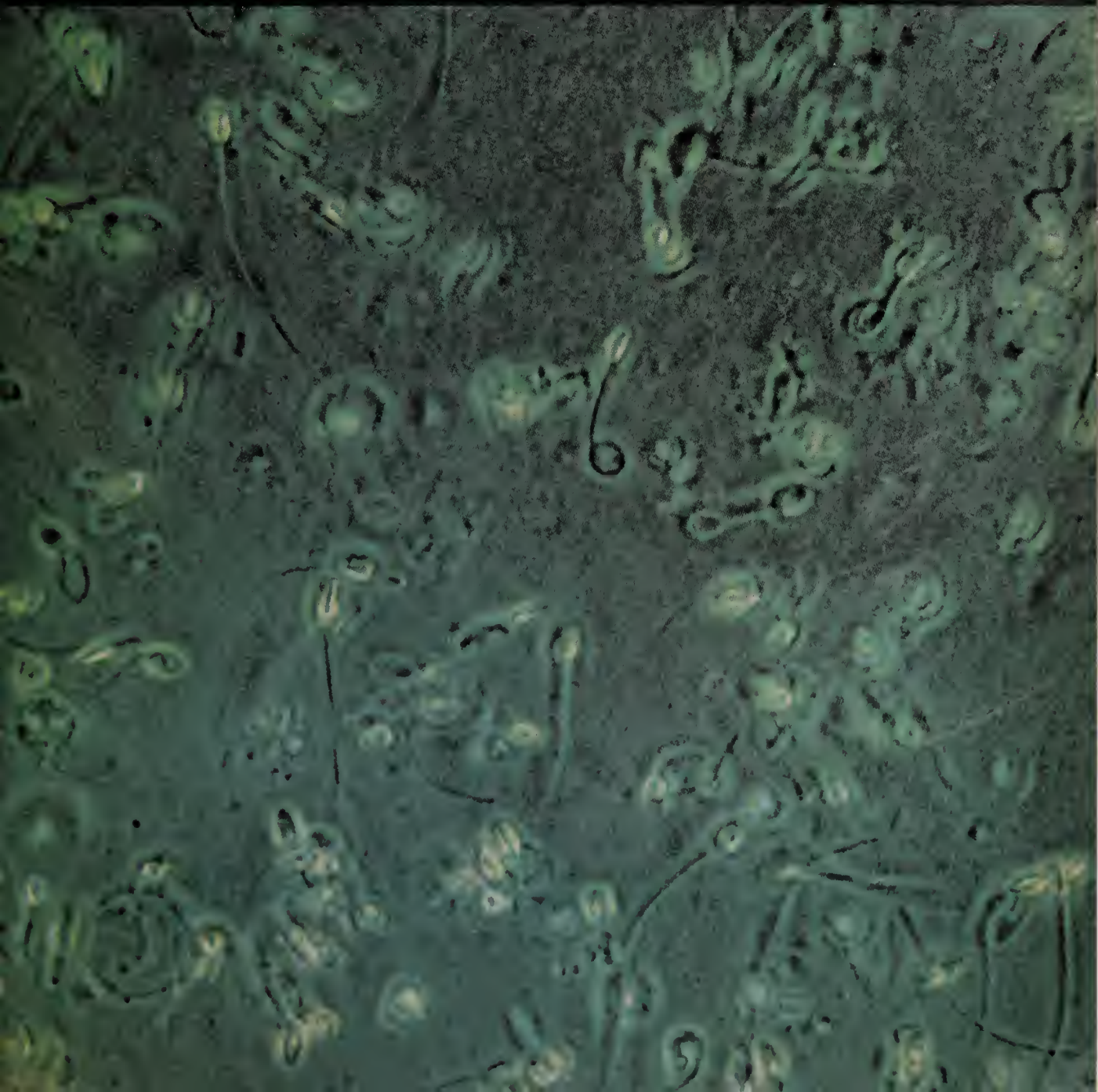
It makes sense to give to the American Cancer Society.



When the talk turns to oral contraceptives, it makes medical sense to remember low-dose Norinyl-1.

(norethindrone 1mg $\bar{c}$ mestranol 0.05mg)

Turn page for contraindications, precautions and side effects.



Reduction of oral contraceptive dosage to the lowest effective levels is a well-accepted principle of conservative medical practice. In keeping with this view, Norinyl is now also available as Norinyl-1, containing exactly one half the previous dosage of norethindrone and mestranol. Clinical experience has established that effective fertility control can be achieved with the same degree of reliability and safety with new Norinyl-1 when taken as directed.

What about switching patients from higher dosage forms?

In transferring patients to low-dose Norinyl-1 from higher-dosage oral contraceptives, some breakthrough bleeding may occur in the early cycles. In the majority of cases the bleeding episode is mild and self-limited. The long-term advantages of the lower dosage form should be weighed against the inconvenience of possible breakthrough bleeding in the individual patient.

Contraindications: 1. Patients with thrombophlebitis or with a history of thrombophlebitis or pulmonary embolism. 2. Liver dysfunction or disease. 3. Patients with known or suspected carcinoma of the breast or genital organs. 4. Undiagnosed vaginal bleeding.

Warnings: 1. Discontinue medication pending examination if there is sudden partial or complete loss of vision or if there is a sudden onset of proptosis, diplopia or migraine. If examination reveals papilledema or retinal vascular lesions, medication should be withdrawn. 2. Since the safety of NORINYL-1 (norethindrone 1 mg. with mestranol 0.05 mg.) in pregnancy has not been demonstrated, it is recommended that for any patient who has missed two consecutive periods, pregnancy should be ruled out before continuing the contraceptive regimen. If the patient has not adhered to the prescribed schedule, the possibility of pregnancy should be considered at the time of the first missed period. 3. Detectable amounts of the active ingredients in oral contraceptives have been identified in the milk of mothers receiving these drugs. The significance of this dose to the infant has not been determined.

Precautions: 1. The pretreatment physical examination should include special reference to breast and pelvic organs, as well as a Papanicolaou smear. 2. Endocrine and possibly liver function tests may be affected by treatment with NORINYL-1. Therefore, if such tests are abnormal in a patient taking NORINYL-1 it is recommended that they be repeated after the drug has been withdrawn for two months. 3. Under the influence of estrogen-progestogen preparations, preexisting uterine fibromyomata may increase in size. 4. Because these agents may cause some degree of fluid retention, conditions that may be influenced by this factor, such as epilepsy, migraine, asthma, cardiac or renal dysfunction, require careful observation. 5. NORINYL-1 should be used with caution in patients with a history of cerebrovascular accident. 6. In relation to breakthrough bleeding, and as in all cases of irregular bleeding *per vaginam*, nonfunctional causes should be borne in mind. In cases of undiagnosed vaginal bleeding, adequate diagnostic measures are indicated. 7. Patients with a history of psychic depression should be carefully observed and the drug discontinued if the depression recurs to a serious degree. 8. Any possible influence of prolonged NORINYL-1 therapy on pituitary, ovarian, adrenal, hepatic or uterine function awaits further study. 9. A decrease in glucose tolerance has been observed in a small percentage of patients on oral contraceptives. The mechanism of this decrease is obscure. For this reason, diabetic patients should be carefully observed while receiving NORINYL-1 therapy.

10. Because of the occasional occurrence of thrombophlebitis and pulmonary embolism in patients taking oral contraceptives, the physician should be alert to the earliest manifestations of the disease. 11. Because of the effects of estrogens on epiphyseal closure, NORINYL-1 should be used judiciously in young patients in whom bone growth is not complete. 12. The age of the patient constitutes no absolute limiting factor, although treatment with NORINYL-1 may mask the onset of the climacteric. 13. The pathologist should be advised of NORINYL-1 therapy when relevant specimens are submitted.

Side effects observed in patients receiving oral contraceptives: The following adverse reactions have been observed in patients receiving oral contraceptives: nausea, vomiting, gastrointestinal symptoms (such as abdominal cramps and bloating), breakthrough bleeding, spotting, change in menstrual flow, amenorrhea, edema, chloasma or melasma, breast changes (tenderness, enlargement and secretion), change in weight (increase or decrease), changes in cervical erosion and cervical secretion, suppression of lactation when given immediately postpartum, cholestatic jaundice, migraine, rash (allergic), rise in blood pressure in susceptible individuals, mental depression.

Although the following side effects have been reported in users of oral contraceptives, no cause and effect relationship has been established: anovulation post-treatment, premenstrual-like syndrome, change in libido, changes in appetite, cystitis-like syndrome, headache, nervousness, dizziness, fatigue, backache, hirsutism, loss of scalp hair, erythema multiforme, erythema nodosum, hemorrhagic eruption, itching. The following occurrences have been observed in users of oral contraceptives (a cause and effect relationship has been neither established nor disproved): thrombophlebitis, pulmonary embolism, neuro-ocular lesions.

The following laboratory results may be altered by the use of oral contraceptives: increased sulfo-bromophthalein and other hepatic function tests, coagulation tests (increase in prothrombin, Factors VII, VIII, IX and X), thyroid function (increase in PBI and butanol extractable protein-bound iodine and decrease in T^3 values), metyrapone test, pregnanediol determination.

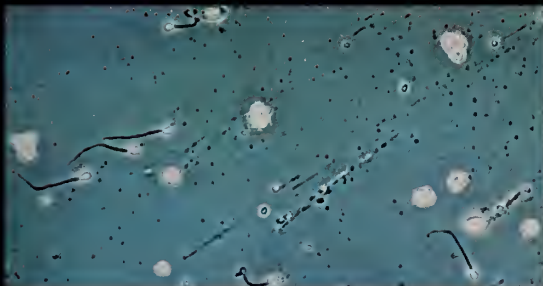
Here's why Norinyl-1 makes medical sense.

The effectiveness of Norinyl-1 as a low-dose oral contraceptive may be explained by its possible multiple action. In addition to its primary action of suppression of ovulation, Norinyl-1 may offer additional protective mechanisms... (1) creation of a cervical mucus that may be hostile to sperm penetration, and (2) development of an endometrium that may be out of phase with nidation. These effects are illustrated below.

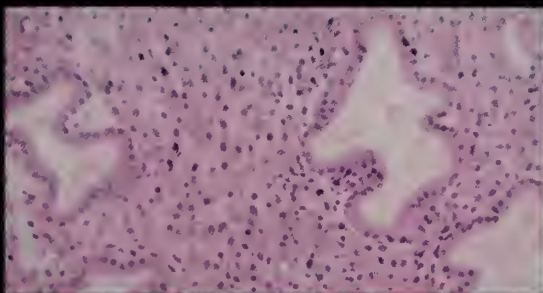
Untreated Patient



Cervical mucus at midcycle is usually thin and watery, with Spinnbarkeit (stretchability) of 15 to 20 cm.



Spermatozoa appear healthy, active, freemoving.

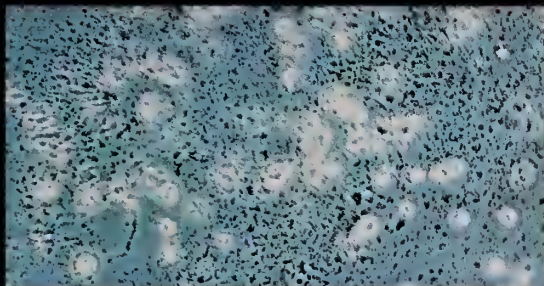


Endometrium of untreated patient is receptive to the fertilized ovum during secretory phase.

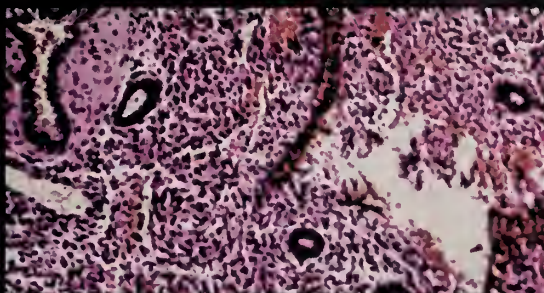
Norinyl-1 Patient



Cervical mucus at midcycle is scanty, viscous—with Spinnbarkeit of 1 cm. or less.



Immobile spermatozoa as they appear in cervical mucus taken from patient treated with Norinyl-1.



Norethindrone in Norinyl-1 accelerates secretory phase, suppresses glandular and vascular development.

Norinyl-1[®]
(norethindrone 1mg, ♂ mestranol 0.05mg.) **tablets**

- new low dose of time-proved ingredients
- established norethindrone/mestranol ratio
- lower patient cost



Indications: Hypertension and many types of edema involving retention of salt and water.

Contraindications: Hypersensitivity and most cases of severe renal or hepatic disease.

Warning: With the administration of enteric-coated potassium supplements, which should be used only when adequate dietary supplementation is not practical, the possibility of small bowel lesions (obstruction, hemorrhage, and per-

foration) should be kept in mind. Surgery for these lesions has frequently been required and deaths have occurred. Discontinue enteric-coated potassium supplements immediately if abdominal pain, distention, nausea, vomiting, or gastrointestinal bleeding occur. Use with caution in pregnant patients, since the drug may cross the placental barrier and adverse reactions which may occur in the adult (thrombocytopenia, hyperbilirubine-

mia, altered carbohydrate metabolism, etc.) are potential problems in the newborn.

Precautions: Antihypertensive therapy with Hygroton should always be initiated cautiously in postsympathectomy patients and in patients receiving ganglionic blocking agents or other potent antihypertensive drugs, or curare. Reduce dosage of concomitant antihypertensive agents by at least one-half. Barbiturates, narcotics or alcohol

may potentiate hypotension. Because of the possibility of progression of renal damage, periodic determination of the BUN is indicated. Discontinue if the BUN rises or liver dysfunction is aggravated. Hepatic coma may be precipitated. Electrolyte imbalance, sodium and/or potassium depletion may occur. If potassium depletion should occur during therapy, Hygroton should be discontinued and potassium supplements given, provided the



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**Now she
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You prescribed Hygroton — to get rid of the edema.

And you found that Hygroton is not only effective; it frequently costs less than other equivalent therapy.

A nice way to treat the Mrs. Larsons in your practice.

Hygroton therapy may mean troublesome side effects for some patients. A summary of the prescribing information is shown below.

tient does not have marked oliguria. Use special care in cirrhosis or severe ischemic heart disease and in patients receiving corticosteroids, ACTH, or digitalis. Salt restriction is not recommended.

Adverse Reactions: Nausea, gastric irritation, vomiting, anorexia, constipation and cramping, dizziness, weakness, restlessness, hyperglycemia, hyperuricemia, headache, muscle cramps, orthostatic hypo-

tension, aplastic anemia, leukopenia, thrombocytopenia, agranulocytosis, impotence, dysuria, transient myopia, skin rashes, urticaria, purpura, necrotizing angitis, acute gout, and pancreatitis when epigastric pain or unexplained G.I. symptoms develop after prolonged administration. Other reactions reported with this class of compounds include: jaundice, xanthopsia, paresthesia, and photosensitization. **Average Dosage:** 50 or 100 mg. with

breakfast daily or 100 mg. every other day.

Availability: White, single-scored tablets of 100 mg. and aqua tablets of 50 mg., in bottles of 100 and 1000. (B)R46-230-D

For full details, please see the complete prescribing information.

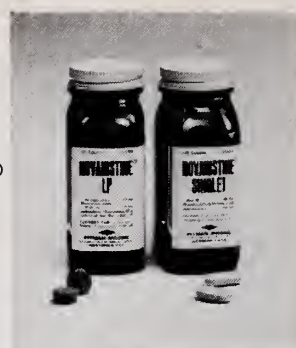
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Some U.R.I. patients are more miserable than others.

That's why we make Novahistine® tablets in two different formulations.

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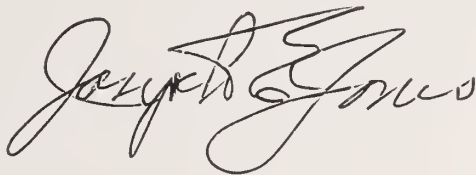
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When the patient complains of fatigue, and you can find no organic cause, you recognize that it may serve her as a means of avoiding responsibilities or facing an emotional problem. It is, in effect, a psychological retreat behind a somatic cover of continuous fatigue—one of the many depressive symptoms often associated with psychic tension.

She needs counsel and reassurance, and perhaps a tranquilizer to attenuate excessive tension and help restore the capacity to cope. As an aid to successful management, consider the value of Valium® (diazepam). As psychic tension is eased by Valium therapy, secondary depressive symptoms too may subside. The patient feels more capable, therefore more hopeful; better able to handle situations of intense stress.

Before prescribing Valium (diazepam), consult complete product information; a summary follows:

Indications: Tension and anxiety states; somatic complaints which are concomitants of emotional factors; psychoneurotic states manifested by tension, anxiety, apprehension, fatigue, depressive symptoms or agitation; acute agitation, tremor, delirium tremens and hallucinosis due to acute alcohol withdrawal; adjunctively in: skeletal muscle spasm due to reflex spasm to local pathology, spasticity caused by upper motor neuron disorders; athetosis, stiff-man syndrome, convulsive disorders (not for sole therapy).

Contraindications: Known hypersensitivity to drug; children under 6 months of age; acute narrow angle glaucoma; may be used in patients with open angle glaucoma who are receiving appropriate therapy.

Warnings: Not of value in treatment of psychotic patients, and should not be employed in lieu of appropriate treatment. As with most CNS-acting drugs, caution patients against hazardous occupations requiring complete mental alertness (*e.g.*, operating machinery, driving). When used adjunctively in convulsive disorders, possibility of increase in frequency and/or severity of grand mal seizures may require increase in dosage of standard anticonvulsant medication; abrupt withdrawal in such cases may also be associated with temporary increase in frequency and/or severity of seizures. Advise patients against simultaneous ingestion of alcohol and other CNS depressants. Withdrawal symptoms (similar to those with barbiturates and alcohol) have occurred following abrupt discontinuance. Keep addiction-prone individuals (such as drug addicts or alcoholics) under careful surveillance because of their predisposition to habituation and dependence. Use of any drug in pregnancy, lactation or in women of childbearing age requires that potential benefit be weighed against possible hazard.

Precautions: If combined with other psychotropics or anticonvulsants, carefully consider individual pharmacologic effects—particularly with known compounds which may potentiate action of Valium, such as pheno-

thiazines, narcotics, barbiturates, MAO inhibitors and other antidepressants. Employ usual precautions in the severely depressed or in those with latent depression; suicidal tendencies may be present and protective measures necessary. Observe usual precautions in impaired renal or hepatic function. Limit dosage to smallest effective amount in elderly and debilitated to preclude ataxia or oversedation (initially 2 to 2½ mg once or twice daily, increasing gradually as needed or tolerated). **Adverse Reactions:** Side effects most commonly reported: drowsiness, fatigue and ataxia. Infrequently encountered: confusion, constipation, depression, diplopia, dysarthria, headache, hypotension, incontinence, jaundice, changes in libido, nausea, changes in salivation, skin rash, slurred speech, tremor, urinary retention, vertigo and blurred vision. Paradoxical reactions such as acute hyperexcited states, anxiety, hallucinations, increased muscle spasticity, insomnia, rage, sleep disturbances and stimulation have been reported; should these occur, use of the drug should be discontinued. Because of isolated reports of neutropenia and jaundice, periodic blood counts and liver function tests are advisable during long-term therapy. Minor changes in EEG patterns (low-voltage fast activity) observed during and after therapy and are of no known significance.

Dosage: Individualize for maximum beneficial effect. **Adults:** Tension, anxiety and psychoneurotic states, 2 to 10 mg b.i.d. to q.i.d.; alcoholism, 10 mg t.i.d. or q.i.d. in first 24 hours, then 5 mg t.i.d. or q.i.d. as needed; adjunctively in skeletal muscle spasm, 2 to 10 mg t.i.d. or q.i.d.; adjunctively in convulsive disorders, 2 to 10 mg b.i.d. to q.i.d. **Geriatric or debilitated patients:** 2 to 2½ mg, 1 or 2 times daily initially, increasing as needed and tolerated. (See Precautions.) **Children:** 1 to 2½ mg t.i.d. or q.i.d. initially, increasing as needed and tolerated (not for use under 6 months).

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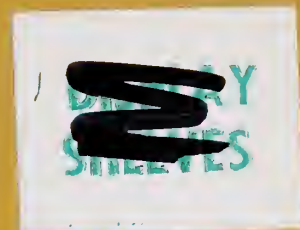
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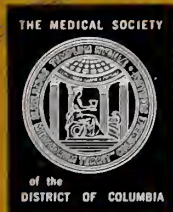
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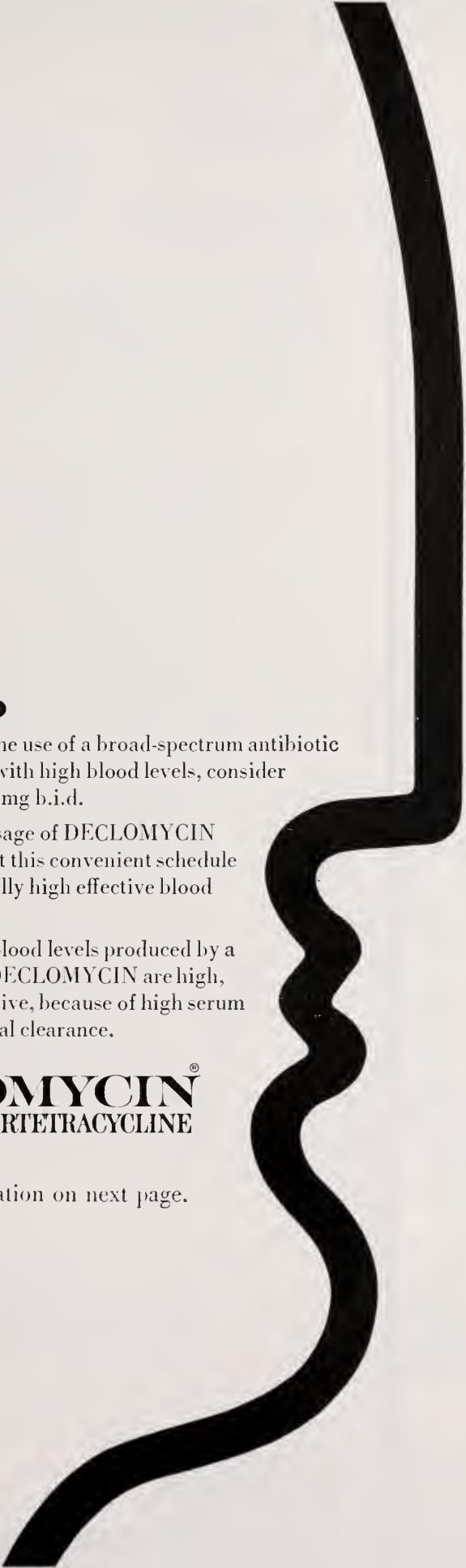
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Average Adult Daily Dosage: 150 mg q.i.d. or 300 mg b.i.d. Should be given 1 hour before or 2 hours after meals, since absorption is impaired by the concomitant administration of high calcium content drugs, foods and some dairy products. Treatment of streptococcal infections should continue for 10 days, even though symptoms have subsided.

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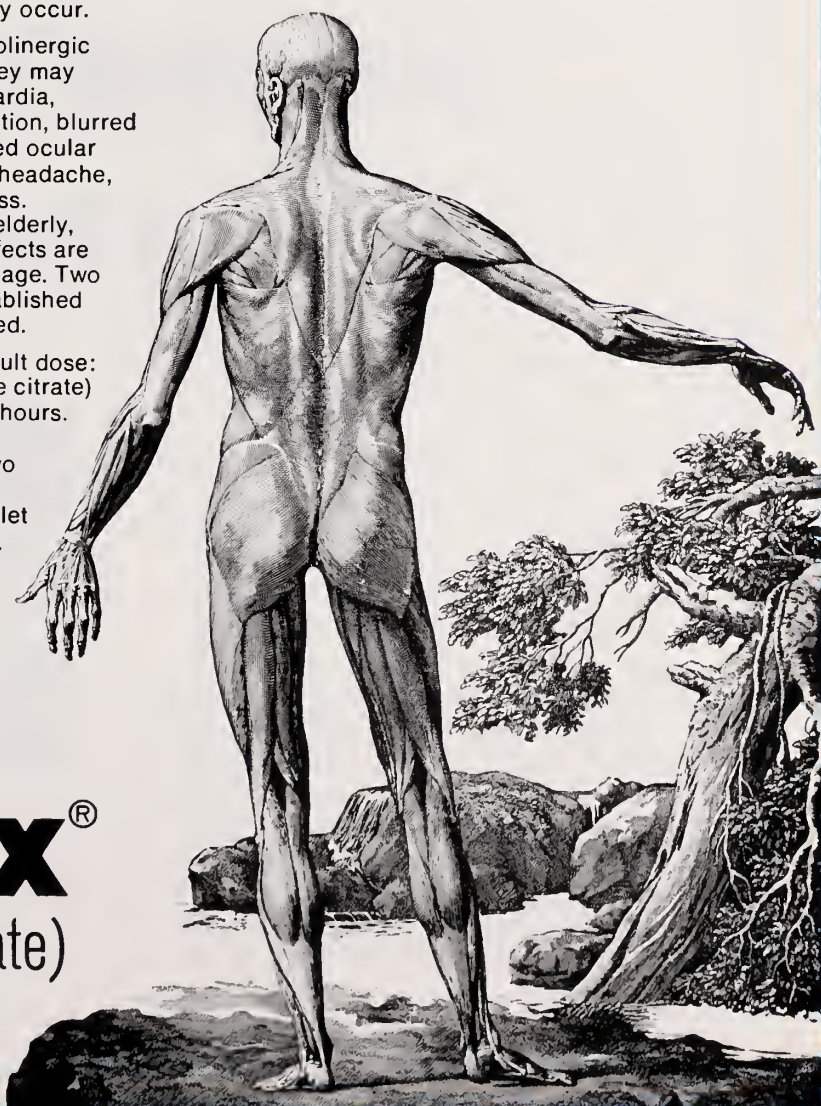
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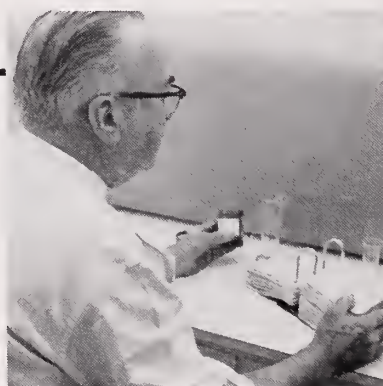
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Meprobamate: Drowsiness may occur and can be associated with ataxia; the symptom can usually be controlled by decreasing the dose, or by concomitant administration of central stimulants. Allergic or idiosyncratic reactions: maculopapular rash, acute nonthrombocytopenic purpura with petechiae, ecchymoses, peripheral edema and fever, transient leukopenia. A case of fatal bullous dermatitis, following administration of meprobamate and prednisolone, has been reported. Hypersensitivity has produced fever, fainting spells, angioneurotic edema, bronchial spasms, hypotensive crises (1 fatal case), anuria, stomatitis, proctitis (1 case), anaphylaxis, agranulocytosis and thrombocytopenic purpura, and a fatal instance of aplastic anemia, but only when other drugs known to elicit these conditions were given concomitantly. Fast EEG activity, usually after excessive dosage. Impairment of visual accommodation. Massive overdosage may produce drowsiness, lethargy, stupor, ataxia, coma, shock, vasomotor and respiratory collapse.

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Dextro-Amphetamine Sulfate (15 mg.)
with Meprobamate (300 mg.)

Sustained Release Capsules

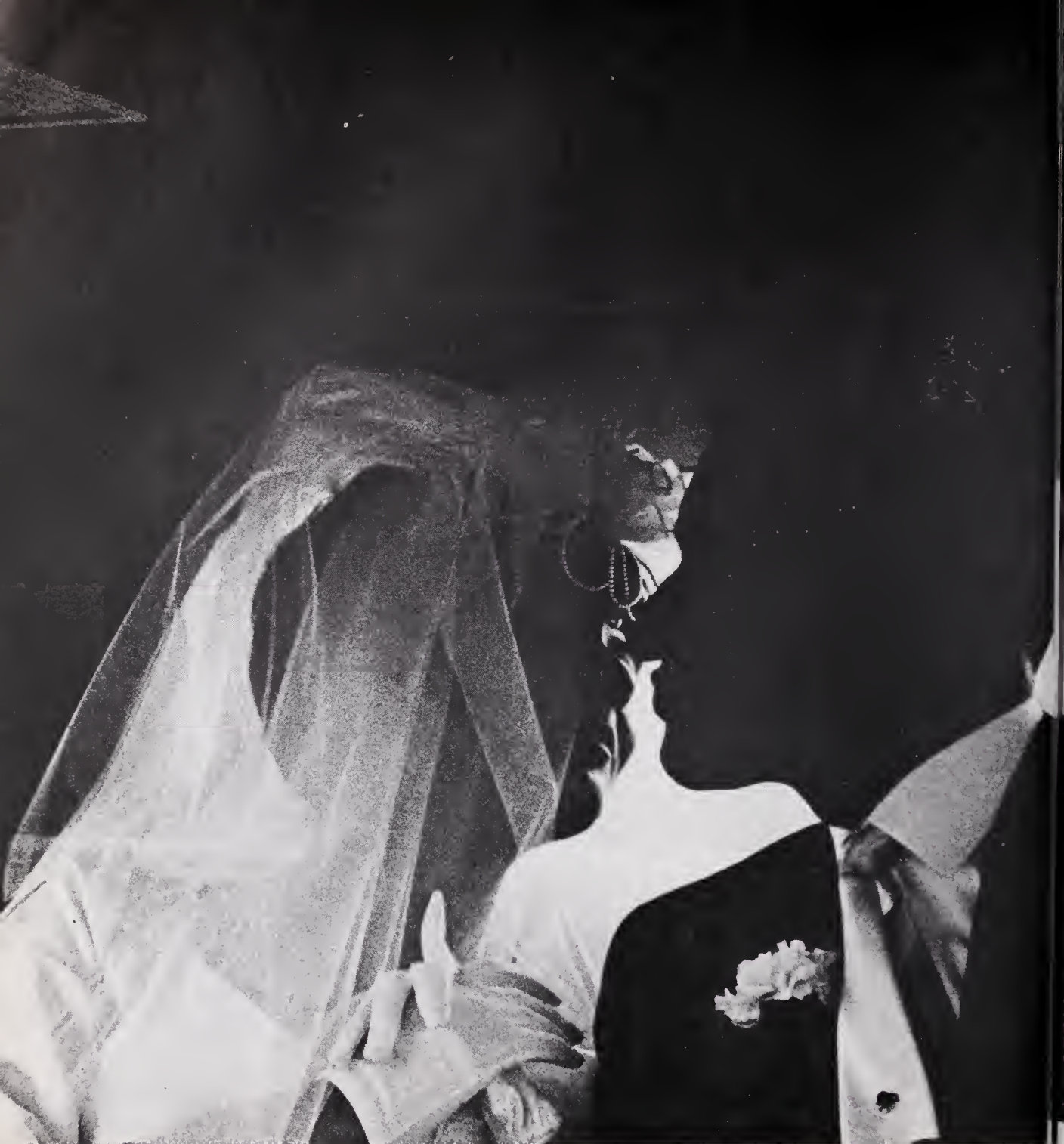


LEDERLE LABORATORIES

A Division of American Cyanamid Company

Pearl River, New York

361-B



Indications: Tofrānil is recommended for the treatment of depressive states of diverse psychopathology.

Contraindications: The concomitant use of Tofrānil and monoamine oxidase inhibiting (M.A.O.I.) compounds is contraindicated. Hyperpyretic crises or severe convulsive seizures may occur. Potentiation of adverse effects can be serious or even fatal. An interval of at least 7 days after M.A.O.I. therapy has been discontinued should be allowed before Tofrānil may be substituted. Initial Tofrānil dosage should be low, increases should be gradual, and the patient's progress should be carefully observed.

Warning: Clinical reports have suggested that there may be a risk of teratogenesis associated with the use of this compound during the first trimester of pregnancy. Unless, in the opinion of the prescribing physician, the potential benefits outweigh the

possible risks, Tofrānil should not be used during the first trimester of pregnancy.

Cardiovascular complications, including myocardial infarction and arrhythmias, have occasionally occurred in susceptible individuals. Patients with cardiovascular disease should be given the drug only under careful observation and in low dosage.

Precautions: Since suicide is always a possibility in severely depressed patients and one which may persist until significant remission occurs, such patients should be carefully supervised during early treatment with Tofrānil. Some severely depressed patients may also require hospitalization and/or concomitant electroconvulsive therapy.

Because of its anticholinergic effect, caution should be observed in prescribing Tofrānil for patients with increased intraocular pressure.

In rare instances, transient cardiac arrhythmias have occurred in hyperthyroid patients and in patients receiving thyroid medication when Tofrānil was added to the regimen. Imipramine may block the pharmacologic activity of guanethidine and other related adrenergic neuron-blocking agents.

The drug is not recommended at the present time in patients under 12 of age.

Adverse Reactions: Dryness of the mouth, tachycardia, constipation, disturbances of accommodation, sweating, dizziness, weight gain, urinary frequency or retention, nausea and vomiting, peripheral neuritis, mild parkinson-like syndrome, tremors, rare cases of falling in elderly patients, confusional states (with symptoms as hallucinations and disorientation), activation of psychosis in schizophrenics and agitation (inc

When a milestone in life is marred by depression...



omanic and manic episodes) may require dosage reduction. Addition of a tranquilizer or abrupt discontinuation of the drug may precipitate seizures, orthostatic hypotension and substantial blood pressure fall in hypertensive patients, and transient jaundice, bone marrow depression including agranulocytopenia, photosensitization and skin rash may occur with high doses. Adverse effects (impaired libido, and estrogenic effects) may be observed. Side effects may be more pronounced (e.g. paralytic ileus) in debilitated patients and in those receiving anticholinergic agents (including antiparkinsonism drugs). **Adult Dosage:** Initially, 30 mg. daily, increased, if necessary,

to 150 or 200 mg. Maintenance dosage may be lower, 50 to 150 mg. daily, if possible.

Geriatric and Adolescent Dosage: Initially, 30 or 40 mg. daily, which may be increased according to response and tolerance. It is usually unnecessary to exceed 100 mg. daily.

A lag in therapeutic response, lasting from a few days to a few weeks, should be expected. When dosage recommendations are already being followed, increasing the dosage does not normally shorten this latency period and may increase the incidence of adverse reactions.

Availability: Tofrānil: Round tablets of 25 and 50 mg.; triangular tablets of 10 mg. for geriatric and adolescent use; and ampuls, each containing 25 mg. in 2 cc. for I.M. administration. (B)46-850-C

For complete details, please refer to the full Prescribing Information.

Often in the mind of the lonely, widowed, depression-prone individual, she's not gaining a daughter...she's losing a son. The occasion may be marred by depression with such symptoms as feelings of sadness, incapacity, helplessness and hopelessness.

Tofrānil often relieves symptoms of depression.

As maintenance therapy during the active phase of depression, it may help prevent relapse.

The use of Tofrānil in patients receiving M.A.O.I.'s is contraindicated.

In patients with cardiovascular disease, hyperthyroidism or increased intraocular pressure; or in those receiving anticholinergics (including antiparkinsonism agents), thyroid medication, or antihypertensive adrenergic neuron-blocking agents; and in those in their first trimester of pregnancy, the special precautions listed in the prescribing information should be carefully observed.

Toxic reactions severe enough to require discontinuation of Tofrānil are uncommon. However, for complete details, please refer to the full prescribing information.

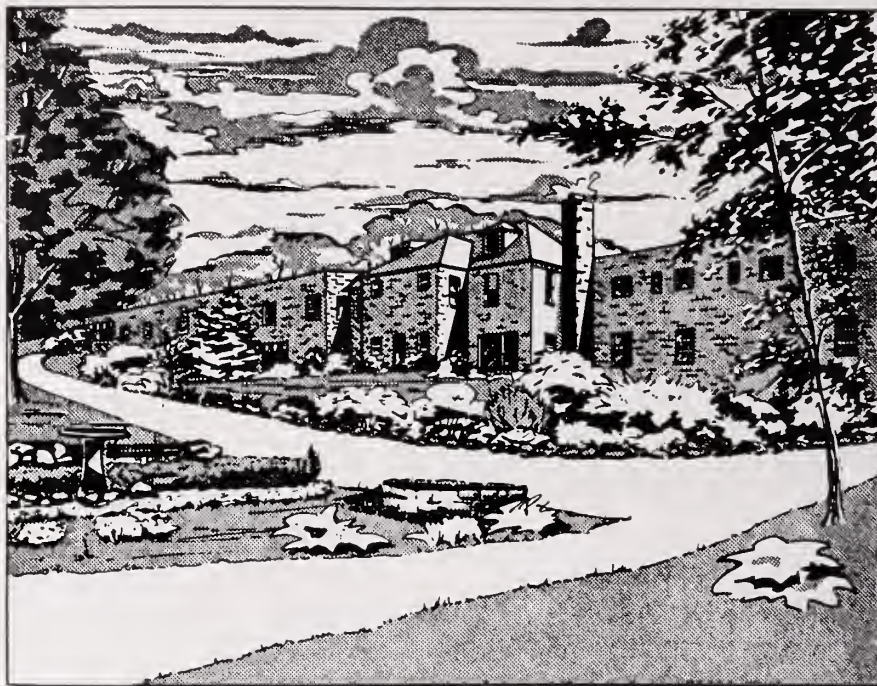
Tofrānil[®] imipramine hydrochloride Geigy



Geigy Pharmaceuticals
Division of Geigy Chemical Corporation
Ardsley, New York 10502

*"All the
Comforts of
Home" ..*

POST OPERATIVE
MEDICAL
CONVALESCENT
DIABETIC
PARALYTIC
INVALID
AGED
CHRONIC
AMBULATORY
RETIRED
GUESTS, ETC.



AN ULTRA-MODERN HOME IN THE SUBURBS ON TEN ACRES
WITH A COUNTRY ATMOSPHERE

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★ A MEDICAL INSTITUTION UNDER THE SUPERVISION OF REGISTERED NURSES ★
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- REHABILITATION FACILITIES
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FOR THE ACCREDITATION OF NURSING HOMES

For Further Information Phone

933-0060 or 933-0872

PROPRIETORS-ADMINISTRATORS

LILLIAN H. and
GEORGE L. BRICKER

digestive disorders

B and C vitamins aid therapy: Nausea, vomiting, and severe diarrhea may seriously interfere with the digestion and absorption of nutrients. STRESSCAPS capsules, containing therapeutic quantities of vitamins B and C, may help meet the needs of these patients. In digestive disorders, as in many stress conditions, STRESSCAPS vitamins aid therapy.

334-0-6471



Each capsule contains:

Vitamin B ₁ (as Thiamine Mononitrate)	10 mg
Vitamin B ₂ (Riboflavin)	10 mg
Vitamin B ₆ (Pyridoxine HCl)	2 mg
Vitamin B ₁₂ Crystalline	4 mcgm
Vitamin C (Ascorbic Acid)	300 mg
Niacinamide	100 mg
Calcium Pantothenate	20 mg

Recommended intake: Adults, 1 capsule daily, for the treatment of vitamin deficiencies. Supplied in decorative "reminder" jars of 30 and 100.

LEDERLE LABORATORIES,
A Division of American
Cyanamid Company, Pearl River, N.Y.



STRESSCAPS[®]
Stress Formula B+C Vitamins Lederle

Don't let monilia cut broad-spectrum therapy short...

start with **Tetrex-F[®]** tetracycline phosphate complex-nystatin

Use of broad-spectrum antibiotics can cause fungal overgrowth in the alimentary tract... and give rise to symptoms so troublesome that therapy must be prematurely stopped. Tetrex-F (tetracycline phosphate complex-nystatin) helps you circumvent this problem.

The nystatin can prevent overgrowth of monilia; the phosphate complex delivers tetracycline to the blood rapidly. Side effects are infrequent.

High-Risk Patients

Tetrex-F (tetracycline phosphate complex-nystatin) is especially useful in patients most susceptible to fungal overgrowth during tetracycline therapy: (1) the elderly or debilitated, (2) young children, (3) the diabetic, (4) those on long-term tetracycline therapy, (5) those on steroid therapy, (6) those who have had moniliasis before, and (7) pregnant patients with a history of monilial vaginitis.

When you start with economical Tetrex-F (tetracycline phosphate complex-nystatin), you can complete the full course of broad-

spectrum therapy with less chance of losing control elsewhere. A good start for a healthy finish.

PRESCRIBING INFORMATION. For complete information consult Official Package Circular. *Indications:* Infections of respiratory, gastrointestinal and genitourinary tracts and skin and soft tissues due to tetracycline-sensitive organisms, in patients with increased susceptibility to monilial infections. *Contraindications:* The drug is contraindicated in patients hypersensitive to its components. *Warnings:* Photodynamic reactions have been produced by tetracyclines. Natural and artificial sunlight should be avoided during therapy. Stop treatment if skin discomfort occurs. With renal impairment, systemic accumulation and hepatotoxicity may occur. In this situation, lower doses should be used. Tooth staining and enamel hypoplasia may be induced during tooth development (last trimester of pregnancy, neonatal period and childhood). *Precautions:* Bacterial superinfections may occur. Infants may develop increased intracranial pressure with bulging fontanels. In gonorrheal therapy, serologic tests for syphilis should be conducted initially and monthly for 3 months. *Adverse Reactions:* Glossitis, stomatitis, nausea, diarrhea, flatulence, proctitis, vaginitis, dermatitis, and allergic reactions may occur. *Usual Adult Dosage:* 1 capsule q.i.d. Continue for 10 days in Beta-hemolytic streptococcal infections. Administer one hour before or two hours after meals. *Supplied:* Capsules, bottles of 16 and 100. Each capsule contains tetracycline phosphate complex equivalent to 250 mg. tetracycline HCl activity and 250,000 units of nystatin. For Oral Suspension, 125 mg. tetracycline and 125,000 u. nystatin/5 ml., 60 ml. bottles.

BRISTOL

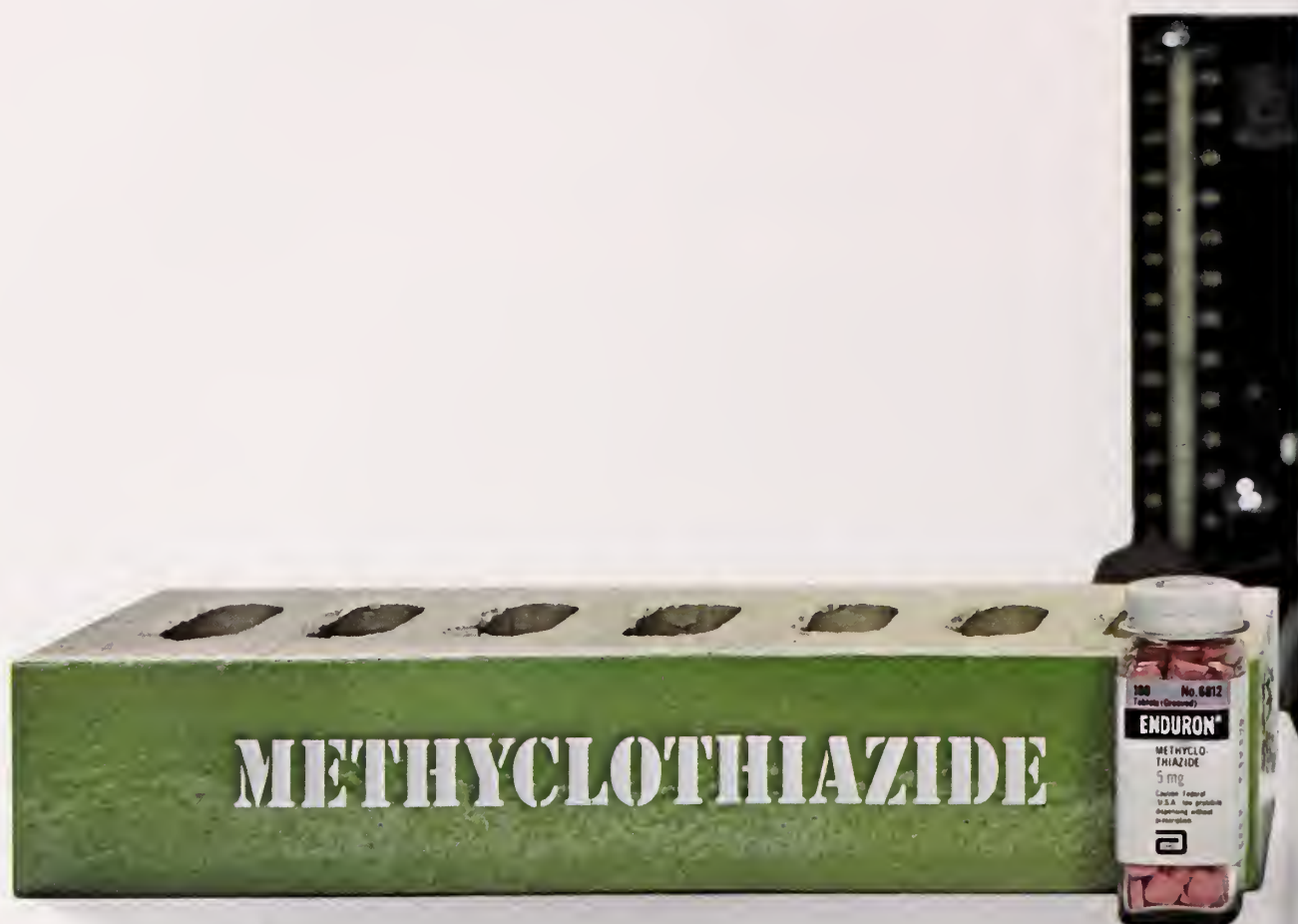
BRISTOL LABORATORIES
Division of Bristol-Myers Company
Syracuse, New York 13201

Abbott Antihypertensive Building Blocks

A simplified approach
to the practical management
of hypertension



Enduron: (methyclothiazide) A basic building block for mild hypertensives



Excellent day-long Na^+ output, yet easy on the K^+

Enduron provides an excellent starting therapy. Your patient's sodium excretion is greatly enhanced. Yet potassium loss is low.

The therapeutic action is smooth, and persists for a full 24 hours. With Enduron you can prescribe convenient once-a-day dosage without skimping your patients on day-long thiazide effectiveness.

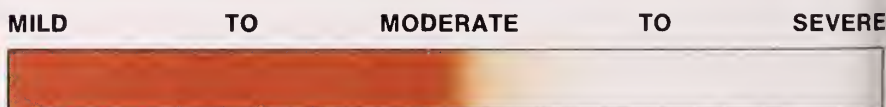
Of course, as with all thiazides, supplemental dietary potassium should also be considered.

Use Enduron as a basic therapy in patients with mild to moderate hypertension. A single 5-mg. tablet each day is ample in most cases.

Once a day, every day

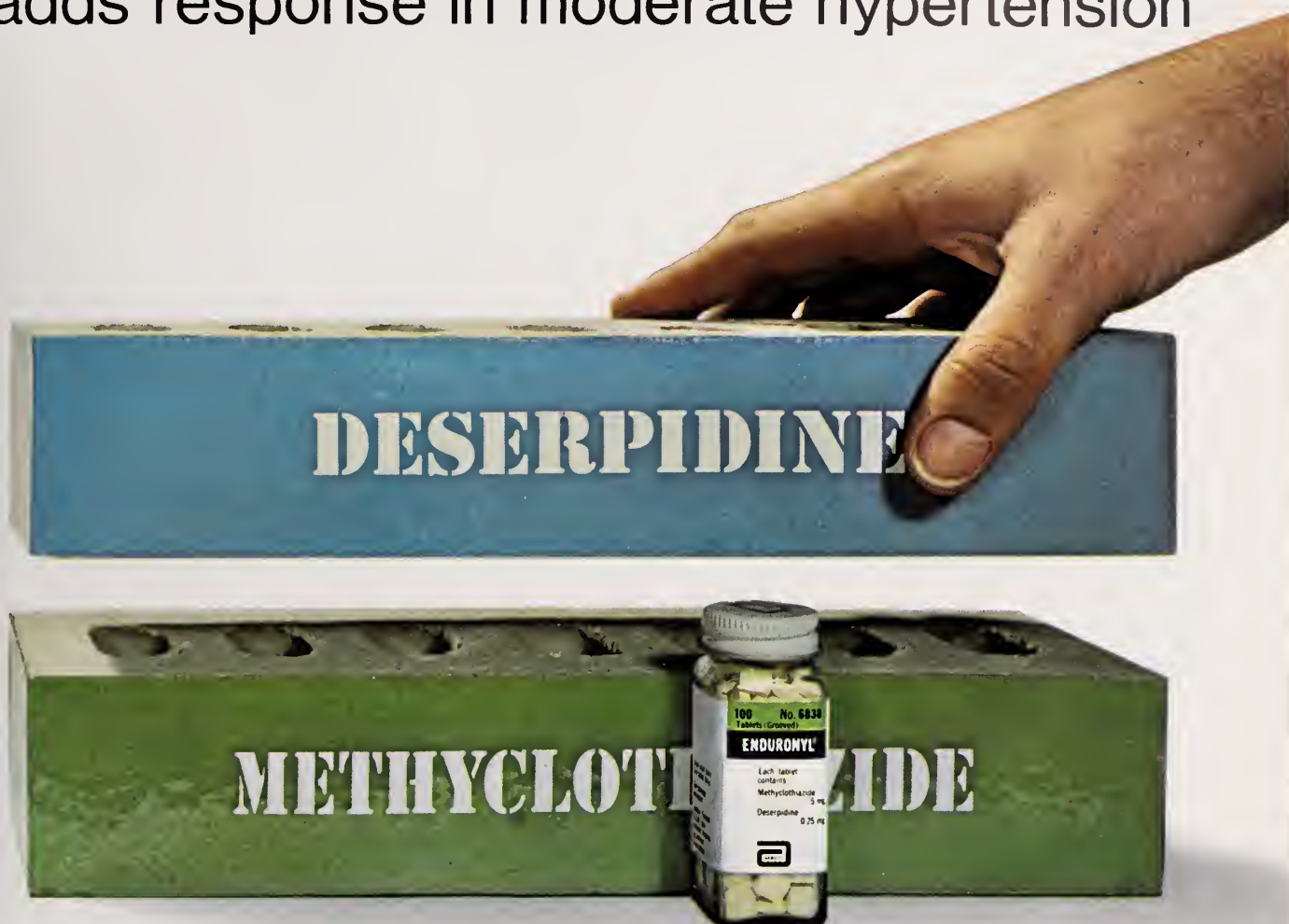
ENDURON[®]

METHYLCLOTHIAZIDE



See Brief Summary on final page of advertisement

Enduronyl: Its deserpidine component adds response in moderate hypertension



Less frequent rauwolfia side effects than with reserpine

When you wish to build further response, consider shifting to Enduronyl.

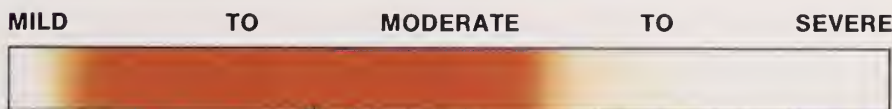
Enduronyl adds a building block of *deserpidine*. This is a purified rauwolfia alkaloid available only from Abbott. It adds good antihypertensive and tranquilizing activity. Yet its incidence of untoward effects, particularly lethargy and depression, is lower than with reserpine.

Enduronyl is available plain or Forte. The latter provides its variation where most helpful, by doubling the deserpidine.

Use Enduronyl for patients throughout the broad range of mild to moderately severe hypertension.

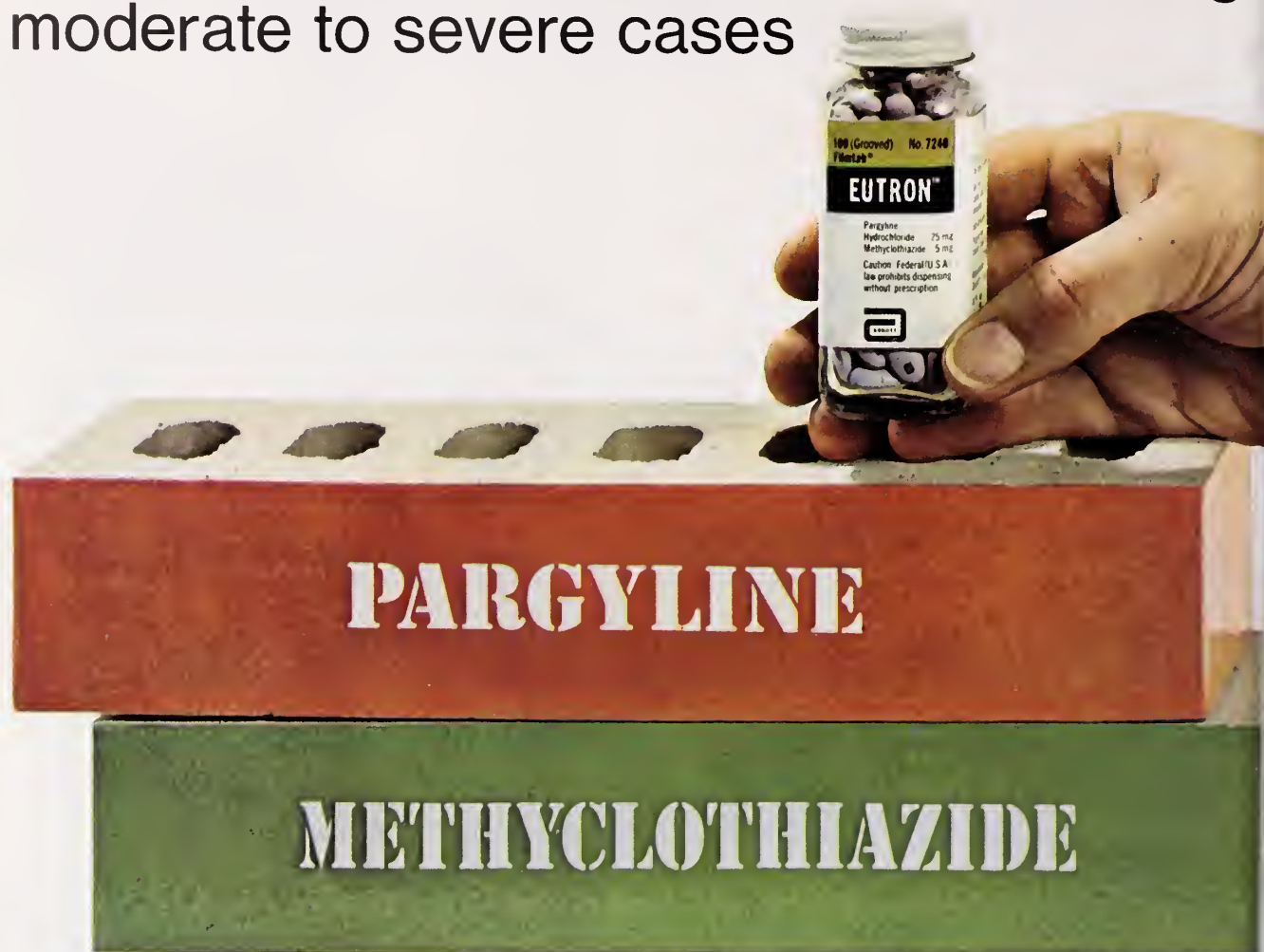
Once a day, every day
ENDURONYL[®]

METHYLOTHIAZIDE 5 mg. with
DESERPIDINE 0.25 mg. or (FORTE) 0.5 mg.



See Brief Summary on final page of advertisement

Eutron: A unique combination for handling moderate to severe cases



Affords almost uniform diastolic reduction in all body positions

Eutron lowers diastolic pressures nearly equally, whether your patient is standing up or lying down.

Thus, in clinical trials, average *standing* diastolic readings were reduced from 112 pre-treatment to 90 post-treatment; *sitting* from 115 to 95; and *recumbent* from 112 to 94.

Note that following Eutron, the diastolic reductions were nearly alike in all three body positions.

Use Eutron for managing your moderate to severe cases. Its building blocks enhance each other; hence lesser doses often suffice.

Once a day, every day

EUTRON™

PARGYLINE HYDROCHLORIDE 25 mg.
with METHYCHLOTHIAZIDE 5 mg.

MILD TO MODERATE TO SEVERE



See Brief Summary on final page of advertisement

801094

ENDURON[®] ENDURONYL[®]

METHYLCLOTHIAZIDE

Each tablet contains
Methyclothiazide 5 mg. with
Deserpidine 0.25 mg. or 0.5 mg.

Indications: Edema and mild to moderate hypertension (Enduron), and mild to moderately severe hypertension (Enduronyl). More potent agents, if added, can be given at reduced dosage.

Contraindications: Sensitivity to thiazides; severe renal disease (except nephrosis) or shutdown; severe hepatic disease or impending hepatic coma (hepatic coma due to hypokalemia has been reported in patients on thiazides). Do not use Enduronyl in severe mental depression, suicidal tendencies, active peptic ulcer, or ulcerative colitis.

Warnings: Consider possible sensitivity where there is history of allergy or asthma. If added potassium is indicated, dietary supplementation is recommended. Reserve enteric-coated potassium tablets for cautious use only when necessary, as they may induce serious or fatal small bowel lesions (stenosis with or without ulceration), cause obstruction, hemorrhage, and perforation often requiring surgery; discontinue them immediately if abdominal pain, distention, nausea, vomiting, or g.i. bleeding occurs. Neither Enduron nor Enduronyl contains added potassium.

Precautions: Use thiazides cautiously in severe renal dysfunction, impaired hepatic function or progressive liver disease; also in pregnancy (bone marrow depression, thrombocytopenia, and altered carbohydrate metabolism have been reported in certain newborn). In surgery, thiazides may reduce response to vasopressors, and increase response to tubocurarine. Antihypertensive response may be enhanced following sympathectomy. Watch for electrolyte imbalance (e.g., hyponatremia) in all patients. In hypokalemia (especially in digitalized patients) give supplemental potassium. In hypochloremic alkalosis, give supplemental chloride.

Use rauwolfias with caution in patients with history of peptic ulcer. Rauwolfias with anesthetics may produce hypotension and bradycardia. Discontinue Enduronyl two weeks before elective surgery. Consider vagal blocking agents during emergency surgery. In epilepsy, adjust anticonvulsant dosage. In electroshock, shorten stimulus strength and duration. In occasional patients with depressive tendencies, rauwolfias may precipitate severe mental depression that usually disappears when drug is stopped.

Adverse Reactions: Thiazide reaction include blood dyscrasias (thrombocytopenia with purpura, agranulocytosis, aplastic anemia); elevation of BUN, serum uric acid or blood sugar; anorexia, nausea, vomiting, diarrhea, headache, dizziness, paresthesia, weakness, skin rash, photosensitivity, jaundice, symptomatic gout, and pancreatitis. Cutaneous vasculitis in the elderly has been reported with other thiazides. Adverse effects with deserpidine are qualitatively similar to those with reserpine, but their incidence is lower. These include nasal stuffiness, abdominal cramps or diarrhea, nausea, headache, weight gain, reduced libido and potency, peptic ulcer aggravation, epistaxis, skin eruption, asthma in susceptible patients, electrolyte imbalance, excessive salivation, and a reversible Parkinson's syndrome. Excessive drowsiness, fatigue, weakness, and nightmares may signal mental depression. Thrombocytopenia, purpura, and a symptom manifested by dull sensorium, deafness, uveitis, glaucoma, and optic atrophy are rare allergic reactions to other rauwolfias. Hypotension from antihypertensive agents may precipitate angina attacks in susceptible individuals. Usually adverse reactions disappear when drug is withdrawn.

EUTRON[™] Each tablet contains Pargyline Hydrochloride 25 mg. with Methyclothiazide 5 mg.

Indications—Moderate to severe hypertension.

Contraindications—Pheochromocytoma, paranoid schizophrenia, hyperthyroidism and advanced renal failure. Not recommended in malignant hypertension, children under 12, pregnant patients.

Do not use with: centrally or peripherally acting sympathomimetic drugs; foods high in tyramine (e.g., aged and natural cheeses); parenteral reserpine or guanethidine; imipramine, amitriptyline, desipramine, nortriptyline or their analogues; other monoamine oxidase inhib-

itors; methyldopa or dopamine; separate Eutron and these agents by two weeks.

Sensitivity to thiazides; severe renal disease (except nephrosis) or shutdown; severe hepatic disease; impending hepatic coma from thiazide-induced hypokalemia.

Warnings—Patients: 1. No other drugs (particularly "cold preparations" and antihistamines), cheese or alcohol without physician's consent. 2. Promptly report orthostatic symptoms, severe headache, other unusual symptoms. 3. Angina pectoris or coronary artery disease patients must not increase physical activity with improved anginal symptoms or well-being.

Physicians: 1. Use antihistamines, hypnotics, sedatives, tranquilizers and narcotics (meperidine contraindicated) cautiously in reduced doses. 2. Stop Eutron two or more weeks before elective surgery; in emergency surgery reduce premedication (narcotics, sedatives, analgesics, etc.) to 1/4 to 1/5; carefully adjust anesthetic dosage to patient response. 3. Use cautiously in advanced renal failure. 4. Pargyline may induce hypoglycemia. 5. Consider possible sensitivity reactions when a history of allergy or asthma is present. 6. If potassium is indicated, dietary supplement is recommended; enteric-coated potassium tablets may induce serious or fatal small bowel lesions (stenosis with or without ulceration), cause obstruction, hemorrhage, and perforation frequently requiring surgery; discontinue medication immediately if abdominal pain, distention, nausea, vomiting or gastrointestinal bleeding occurs; Eutron does not contain added potassium. 7. Possible systemic lupus erythematosus has been reported for thiazides.

Precautions—Pargyline: Use cautiously at reduced dosage: caffeine, alcohol, antihistamines, barbiturates, chloral hydrate, other hypnotics, sedatives, tranquilizers, narcotics. Periodically do urinalyses, blood counts, liver function tests, etc. Use with caution in liver disease. Watch for orthostatic hypotension, especially in impaired circulation (e.g., angina pectoris, coronary artery disease, cerebral arteriosclerosis); also, augmented hypotension in concomitant febrile illnesses. Reduce or discontinue if hypotension is severe. In impaired renal function watch for cumulative drug effects, elevated BUN and other evidence of progressive renal failure; withdraw drug if these persist. In surgery increased central depressant response (hypotension and increased sedative effect) can be controlled by (1) discontinuing at least two weeks prior; (2) in emergency surgery lowering dose of premedication; (3) when necessary, administering a vasopressor. Do not use in hyperactive and hyperexcitable patients. Pargyline may unmask severe psychotic symptoms where emotional problems pre-exist. Use cautiously in Parkinsonism, especially with antiparkinsonian agents. In prolonged therapy, examine for change in color perception, visual fields, fundi and visual acuity. Also, prolonged therapy has made certain patients refractory to nerve blocking effects of local anesthetics.

Methyclothiazide: Use cautiously in severe renal dysfunction, impaired hepatic function or progressive liver disease; also in pregnancy (bone marrow depression, thrombocytopenia, and altered carbohydrate metabolism have been reported in certain newborn). In surgery thiazide may reduce vasopressor response and increase tubocurarine response. Antihypertensive response may be enhanced following sympathectomy. Watch for electrolyte imbalance (e.g., hyponatremia). Give supplemental chloride if hypochloremic alkalosis occurs and supplemental potassium if hypokalemia occurs (especially in digitalized patients). Thiazides may decrease serum P.B.I. without signs of thyroid disturbance.

Adverse Reactions — Pargyline: Orthostatic hypotension and associated symptoms, mild constipation, fluid retention, edema, dry mouth, sweating, increased appetite, arthralgia, nausea, vomiting, headache, insomnia, difficulty in micturition, nightmares, impotence, delayed ejaculation, rash, purpura, weight gain, hyperexcitability, increased neuromuscular activity and other extrapyramidal symptoms. Drug fever is extremely rare. Reduction in blood sugar and hypoglycemic effects are possible. Congestive heart failure has been reported in a few patients with reduced cardiac reserve.

Methyclothiazide: Blood dyscrasias (thrombocytopenia with purpura, agranulocytosis, aplastic anemia); elevation of BUN, blood sugar or serum uric acid (gout may be induced); anorexia, nausea, vomiting, diarrhea, headache, dizziness, paresthesia, weakness, skin rash, photosensitivity, jaundice and pancreatitis. Cutaneous vasculitis in elderly patients has been reported with other thiazides.

If side effects are severe or persist, reduce dosage or withdraw drug.



804436R



Hairy sites
where creams
and ointments
do not spread
or penetrate
readily.

Exposed areas
where cosmetic
considerations are
important.

An invisible topical

for many
dermatologic
problems

Moist or
intertriginous areas
where drying action
is desirable.

*See last page
for contraindications, precautions
and side effects.*

**Structurally unique
topical steroid
in propylene glycol
vehicle produces
rapid response
in many dermatoses.**

Synalar Solution produces rapid antiinflammatory, anti-pruritic action through its unique topical corticosteroid, fluocinolone acetonide. The propylene glycol vehicle provides additional benefits for therapy at problem sites where it is difficult to achieve contact between the lesion and medication — or where creams or ointments may make the lesions worse. Synalar Solution has proved particularly valuable in the symptomatic treatment of seborrheic dermatitis of the scalp, nasolabial folds, eyebrows,

ears, and in flexural folds such as the axillae, inframammary, umbilical and anocral areas. It has also been reported to achieve excellent results in the adjunctive management of atopic dermatitis, contact dermatitis, neurodermatitis, nummular eczema, psoriasis, and sweat retention syndromes in these problem sites.

**Penetrates
the hairy sites.**

In many areas of the body, hair gets in the way of treating the underlying dermatitis. The propylene glycol vehicle of Synalar Solution permits penetration and dispersion at sites where creams and ointments do not readily penetrate. May be applied without matting of hair.

**Ideal for moist or
intertriginous areas.**

Propylene glycol is strongly hygroscopic and is especially useful where sweat retention is a problem. Its low surface tension permits easy spreadability in difficult-to-treat body areas. A number of studies have also shown that propylene glycol has inherent antimicrobial activity.



Cosmetically acceptable for exposed areas.

The propylene glycol vehicle of Synalar Solution possesses many useful cosmetic properties. Clear and greaseless, it is not sticky or messy, will not stain clothing or skin. In exposed areas of the body where cosmetic appeal is important, Synalar Solution shows nothing but results.

Economical—a little does a long way.

Because of the properties of propylene glycol and the milligram potency of fluocinolone acetonide, a small quantity of Synalar Solution does a long way. Also, the prescription price of a 20 cc. plastic squeeze bottle of Synalar Solution is surprisingly low. Thus, your patients obtain economy with the proved efficacy of a potent, truly advanced topical corticosteroid.

Contraindications: Tuberculous, fungal, and most viral lesions of the skin (including herpes simplex, vaccinia, and varicella). Not for ophthalmic use. Contraindicated in individuals with a history of hypersensitivity to any of the components.

Precautions: In some patients with dry lesions, the solution may increase dryness, scaling, or itching. Application to denuded or fissured areas, such as genital or perianal sites, may produce a burning or stinging sensation. If this persists and dermatitis does not improve, discontinue medication. Although propylene glycol has antiseptic activity, there should be careful initial evaluation and follow-up of infected sites. Incomplete response or exacerbation of lesions may be due to true infection, which requires susceptibility testing and appropriate therapy. On the other hand, saprophytic or low grade infections may clear spontaneously under the influence of Synalar Solution alone. Where severe local infection or systemic infection exists, the use of systemic antibiotics should be considered, based on susceptibility testing. While topical steroids have not been reported to have adverse effect on pregnancy, the safety of their use on pregnant females has not absolutely been established. Therefore, they should not be used extensively on pregnant patients, in large amounts, or for prolonged periods of time.

Side Effects: Side effects are not encountered ordinarily with topically applied corticosteroids. As with all

drugs, however, a few patients may react unfavorably to Synalar under certain conditions.

Availability: Synalar (fluocinolone acetonide) Solution 0.01% in a propylene glycol vehicle with citric acid as preservative. 20 and 60 cc. plastic squeeze bottles. Also available: Synalar (fluocinolone acetonide) Cream 0.025% — 5, 15 and 60 Gm. tubes and 425 Gm. jars. Cream 0.01% — 15, 45 and 60 Gm. tubes and 120 Gm. jars. Ointment 0.025% — 15 and 60 Gm. tubes. Neo-Synalar® (neomycin sulfate 0.5% [0.35% neomycin base], fluocinolone acetonide 0.025%) Cream — 5, 15 and 60 Gm. tubes.

fluocinolone acetonide — an original steroid from
SYNTEX 
LABORATORIES INC., PALO ALTO, CALIF.

Synalar[®] (fluocinolone acetonide) Solution 0.01%

An invisible topical



Synirin provides prompt barbiturate potentiation of aspirin without limiting the therapeutic usage of aspirin. Both pentobarbital and aspirin begin their action together promptly and last 4 or 5 hours. There is no accumulation.

LITERATURE AND CLINICAL SUPPLY AVAILABLE TO PHYSICIANS

*SYNIRIN is another
pharmaceutical achievement*

WM. P. POYTHRESS & CO., INC.
RICHMOND, VIRGINIA 23217
Manufacturers of ethical pharmaceuticals since 1856



Synirin®

ACETYL SALICYLIC ACID (ASPIRIN)..... 5 GR.
*PENTOBARBITAL (ACID)..... 1/8 GR.
*Warning: may be habit-forming

To fight TB- find it first!

Make tuberculin testing routine
with every physical examination.



TUBERCULIN, TINE TEST

(Rosenthal)

Side effects are possible but rare: vesiculation, ulceration, or necrosis at test site. Contraindications: none, but use with caution in active tuberculosis. Available in 5's and 25's.



330-8/6135

KALORAMA CONVALESCENT HOME, INC.

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of Licenses and

D. C. Department
Inspections



INSTITUTIONAL CARE

for the medical management of
the acute stages of alcoholism.

2001 KALORAMA ROAD
at 20th Street, N.W. Adams 2-0063



Books Received

ACKNOWLEDGMENT IS MADE of the following books which have recently been received.

Medical Department, United States Army: Physical Standards in World War II. COLONEL ROBERT S. ANDERSON, Editor-in-Chief; CHARLES M. WILTSE, PH.D., LITT. D., Editor for Physical Standards. Prepared and published under the direction of Lieutenant General Leonard D. Heaton, The Surgeon General, United States Army. Price, \$3.00. Pp. 356, with 14 illustrations. Washington, D. C. 20402: U. S. Government Printing Office, 1967.

Micro-Vascular Surgery. Report of First Conference, October 6-7, 1966, Mary Fletcher Hospital, Burlington, Vermont. Edited by R. M. PEARDON DONAGHY, M.D., AND M. GAZI YASARGIL, M.D. Price, \$17.50. Pp. 171, with 217 illustrations. St. Louis: Mosby, 1967.

Corneal and Scleral Contact Lenses. Proceedings of the International Congress sponsored by the Department of Ophthalmology, Baylor University College of Medicine, and The Eyes of Texas, Inc., Sight Foundation, March 20-24, 1966. LOUIS J. GIRARD, M.D., Editor; JOSEPH W. SOPER, Associate Editor; AND CARLEEN GUNN, Assistant Editor. Price, \$29.50. Pp. 512, with 182 figures and 7 color plates. St. Louis: Mosby, 1967.

Pathology of Infancy and Childhood. JOHN M. KISSANE, M.D., AND MARGARET G. SMITH, M.D. Price, \$39.50. Pp. 1082, with 703 illustrations. St. Louis: Mosby, 1967.

Digitalis Therapy. A Reappraisal of Digitalis and Cardiac Glycosides; from articles appearing in 1966-67 issue of *American Heart Journal*. ALAN F. LYON, M.D., AND ARTHUR C. DEGRAFF, M.D. Price (paper), \$2.00. Pp. 38. St. Louis: Mosby, 1967.

Alimentary Tract Roentgenology, Volumes 1 and 2. Edited by ALEXANDER R. MARGULIS, M.D., AND JOACHIM H. BURHENNE, M.D., with 47 contributors. Price per set, \$65.00. Pp. 1203, with 1,414 illustrations. St. Louis: Mosby, 1967.

Atlas of Roentgenographic Positions, 3rd ed. VINITA MERRILL. Price per 3-volume set, \$46.50. Pp. 878, illustrated. St. Louis: Mosby, 1967.

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Book Reviews

Atlas of Glaucoma Surgery. JOHN M. McLEAN, M.D. Price, \$17.50. Pp. 125, with 88 figures prepared by Shirley Baty. St. Louis: Mosby, 1967.

This fine atlas is divided into 2 sections. The first and smaller section deals with methods of evaluating glaucoma. The topics briefly dealt with include classification of glaucoma, evaluation of anatomy and function, and selection of operation. Although necessarily brief this section clearly outlines modern concepts concerning glaucoma.

The second section deals with the various surgical methods used to treat glaucoma. The procedures described are those commonly used for open angle, closed angle and infantile glaucoma. The atlas concludes with a brief section on the complications of glaucoma surgery.

Dr. McLean's extensive surgical experience in managing glaucoma is communicated to the reader through the clear text and high quality illustrations. The only fault this reviewer can find is that some of the subjects are not covered in more detail. An example is that the newer cyclodialysis implant procedures are not mentioned at all.

This excellent atlas of the surgical management of glaucoma is highly recommended for all ophthalmologists and especially for eye residents.

LAURENCE E. RUBIN, M.D.

Burns, Shock, and Plasma Volume Regulation. CARL A. MOYER, M.D., and HARVEY R. BUTCHER, JR., M.D. Price, \$18.50. Pp. 428, with 138 illustrations. St. Louis: Mosby, 1967.

The authors have produced a most impressive volume dealing with the factors which influence blood volume regulation, hemorrhagic and dehydrational shock, and burns and burn shock. They expend a great deal of effort in promoting the method of bioassay in evaluating the therapy of hemorrhagic shock and blood volume regulation. Much of the previous research in this field is carefully examined by this critical standard. The mental gymnastics involved in this portion of the book will be of interest chiefly to the research scientist and academician. However, scattered through this lode are nuggets of pure gold for anyone who is called upon to treat patients in shock. Prompt restoration of plasma volume primarily with Ringer's Lactate pH 8.4 has shown itself to be markedly superior to any other type of replacement therapy. The book would be well worth reading if only attention were paid to the summary and conclu-

sions of the first 8 chapters. These alone should serve to revolutionize treatment of shock especially in medical patients.

The last 3 chapters of the book deal with detailed description of the treatment of burn shock and the treatment of the burn wound. Dr. Moyer's development of the 0.5 per cent silver nitrate method of treating burns has proven a milestone in the therapy of this distressing condition. The clinical cases presented clearly indicate that the overwhelming majority of the deleterious effects of a burn are related not to the burn itself but to the results of uncontrolled infection, inadequately cleansed wounds, impenetrable barriers of greasy ointments, and an overall ignorance of an appalling degree about the natural history of a burn.

This book is unique in that it says to the reader, "Most of what you have been doing in the treatment of shock and burns is wrong." It further goes on to tell you what you should do and the authors tell you why you should do it. The weakness of the book from a practical standpoint is that it is too scholarly. Very few practicing physicians have the necessary background in mathematics, statistics or research techniques to be able to read the first two-thirds of it intelligently. This should not prove to be a deterrent to any physician who is called upon to treat patients in shock or who have been burned. He may not always be able to follow the esoteric discussion of the authors but he can certainly profit from following their clear and explicit directions.

The book is highly recommended.

KARL C. JONAS, M.D.

Handbook of Fractures. EDGAR LEE RALSTON, M.D., F.A.C.S., ALFRED RIVES SHANDS, JR., M.D., F.A.C.S., HERNDON BRIGGS LEHR, M.D., F.A.C.S., and FREDERICK WILLIAM PITTS, M.D., F.A.C.S. Price, \$10.75. Pp. 299, with 185 drawings by Shirley Baty, and 152 photographs. St. Louis: Mosby, 1967.

The preface of this book starts with my initial reaction—"another book about fractures"! The theme of the book itself, however, is directed not toward the practicing orthopedic surgeon but primarily to the medical student and intern. It approaches its task admirably from several standpoints, starting with a good general review of the process of fracture healing as well as aspects of examination of the fracture patient. It uses terminology which should be understood by all

of us. At the beginning of each chapter is a section on functional anatomy which is brief and yet explicit. Complications are listed and some attempt is made to explain how to avoid them.

Illustrations and photographs are ample, enhancing the overall effectiveness of the book.

I can recommend this volume enthusiastically to student and intern as well as to the private practitioner who is expected to deal with fractures on a somewhat less sophisticated level than the orthopedic surgeon.

ROBERT P. NIRSCHL, M.D.

Atlas of Strabismus. GUNTER K. VON NOORDEN, M.D., AND A. EDWARD MAUMENEE, M.D. Price, \$17.50. Pp. 188, with 115 illustrations, 29 in color, by Robert B. Wingate, M.S. St. Louis: Mosby, 1967.

This well illustrated and organized "atlas" is recommended to all ophthalmologists, especially to those in residency and to those who are only an occasional "strabismologist." Those having a prime interest in strabismus will find it, in places, somewhat elementary but often a helpful, quick reference reminder in the field of diagnosis.

The book has little of interest or merit for the non-ophthalmic practitioner of medicine.

The orthoptist will find the book most helpful in the field of diagnosis of problems of binocular vision and binocular motility.

To ophthalmologists the section on amblyopia and those on "diagnosis of vertical deviations," "limitation of elevation," and "A and V patterns in horizontal strabismus" are particularly helpful.

One could wish that more emphasis had been placed on "intermittent exotropia" and on "the distinctions between accommodative and nonaccommodative esotropia" since these are found in the majority of patients having strabismus.

The authors are to be commended for a good book "designed for the ophthalmologist-in-training, for the practicing ophthalmologist who confronts diagnosis of complex muscle problems only occasionally, and for the orthoptist."

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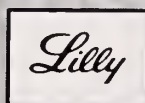


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Permanent Transvenous Endocardial Pacemaking

NICHOLAS P. D. SMYTH, M.D., F.A.C.S.,* AND JAMES M. BACOS, M.D., F.A.C.P.†

THE IMPLANTATION of a permanent pacemaker, usually with myocardial electrodes inserted at left thoracotomy, is one of the commonest heart operations performed today.

The majority of patients requiring this treatment are elderly; some have a variety of respiratory and other ailments, and a few have recently suffered a heart attack. Many are poor candidates for thoracotomy.



FIG. 1. Asynchronous bipolar system. The stylets are removed before connecting the catheter to the pulse generator. The cathode is at the tip of the catheter and is normally the stimulating electrode.

The feasibility of transvenous endocardial pacing was first established by the early laboratory and clinical work of Hopps,¹ Leatham,² and Furman³ between 1954 and 1959. There followed a rather unsatisfactory clinical experience with external power sources in which the percutaneous course of the electrodes led almost inevitably to infection. The system was finally firmly established by the development of a completely im-

plantable system by Lagergren,⁴ Siddons,⁵ and Chardack^{6,7} in the period from 1962 to 1964.

The particular value of this development was the ability to insert the catheter and pulse generator under local anesthesia without the need for thoracotomy. The prime indication for the use of this system was at first in patients with refractory symptomatic heart block following myocardial infarction who are not suitable candidates for thoracotomy. Experience, however, has shown the system to be very satisfactory and has broadened considerably the indications for its use.

Our experience has been with a bipolar asynchronous system‡ at first (figure 1) and with a unipolar standby system§ more recently (figure 2).



FIG. 2. Standby unipolar system. The stylet is removed before connecting the catheter to the pulse generator. The catheter tip contains the sensing and stimulating electrode. The indifferent electrode or anode is the base plate of the pulse generator.

Indications for the use of the asynchronous system include complete heart block with Stokes-Adams syndrome, symptomatic low-cardiac output, or intractable failure. Indications for the use of the standby pacemaker include symptomatic sinus bradycardia, symptomatic intermittent heart block, atrial arrhythmia with varying conduction, and Stokes-Adams syndrome. Asymp-

* Chairman, Department of Surgery, Washington Hospital Center, 110 Irving Street, N.W., Washington, D. C. 20010; Associate Professor of Surgery, George Washington University School of Medicine.

† Chief of Cardiology, Department of Medicine, Washington Hospital Center; Assistant Professor of Medicine, George Washington University School of Medicine.

‡ Medtronic, Inc., Minneapolis, Minn.

§ Ectocor, a product of Cordis Corporation, Miami, Fla.

tomatic slow heart rate due to heart block remains a borderline indication for a permanent pacemaker.

The asynchronous pacemaker stimulates at a set rate independent of, and uninfluenced by, the rate and rhythm of the patient's heart.

The "standby" or "demand" pacemaker senses the heart's rate and supplies in one of 2 ways the required number of beats to reach an acceptable rate. In one type ventricular activity inhibits the pacemaker, which only stimulates if the R-R interval exceeds a preset limit. Unfortunately, it is difficult to shield the instrument from stray electrical fields that may inhibit the pulse generator at a time when it should stimulate, thus negating its function. The second type of standby

tive to appropriate external electrical stimuli which may be used to increase the pacer rate and the patient's heart rate as a test of pacer function. This maneuver is known as "indirect or external overdrive."⁸

Technique of Pacemaker Insertion

In all patients on the day before surgery a bipolar pacemaker catheter is inserted through an arm vein and pacing established unless the patient is in sinus rhythm at a satisfactory rate at the time.

The operative technique has been described before.⁹ The details are important and have much to do with the subsequent success of this method.

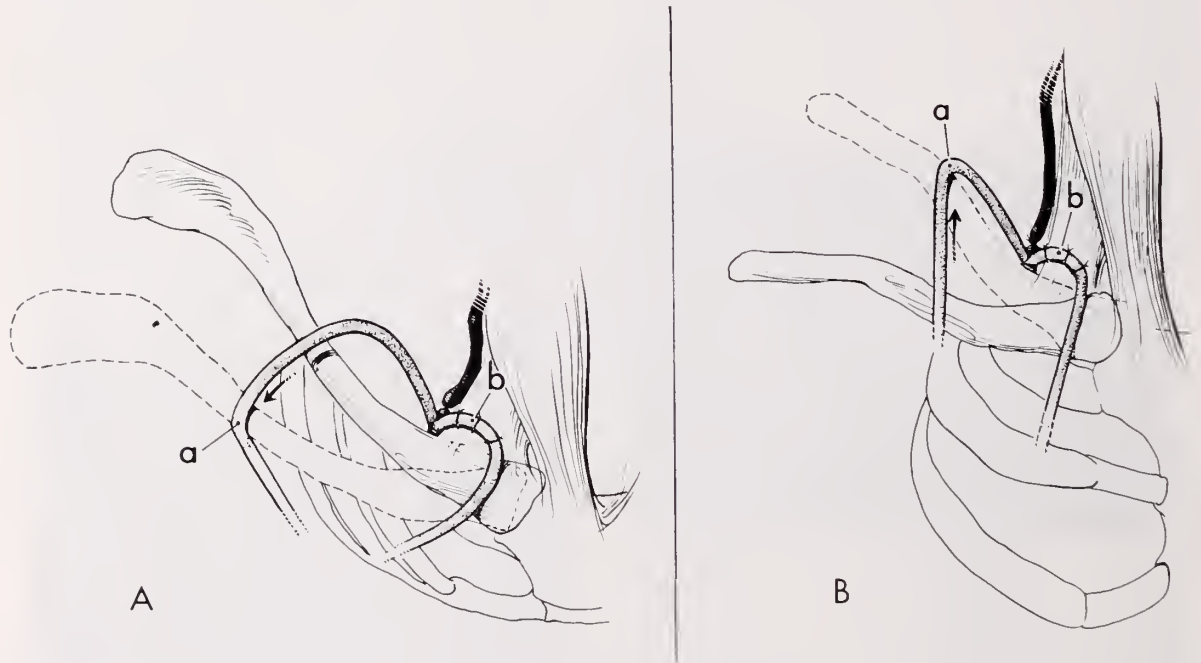


FIG. 3. Drawings showing the effects of anteroposterior (A) and vertical (B) motion of the clavicle on the catheter. The advantages of the medial loop (b) are obvious. From Smyth⁹ (courtesy C. V. Mosby Company, St. Louis, Mo.).

pacemaker (Ectacor[®]) is a modified synchronous pacemaker. With the same electrode for sensing and stimulating, the unit senses the R wave and discharges a synchronized zero delay impulse. If the R-R delay exceeds a certain limit the pacemaker functions as a fixed-rate unit, generally set at a rate of 70 beats per minute. If the patient's rate exceeds 70 beats per minute the unit follows synchronously up to 120 beats per minute when it introduces a 2:1 pacer block. The unit thus stimulates continuously and cannot be inhibited by external electrical fields. It is, however, sensi-

The catheter is inserted into the right external jugular vein by choice, but the external or internal jugular vein or the cephalic vein on either side may be used. Under fluoroscopic control the catheter is passed into the right ventricle and its tip is wedged in the trabeculae of the apex of the right ventricle. With sensitive equipment, thresholds of 0.4 to 0.6 ma. can readily be obtained and should be sought before accepting any catheter position as final.⁸ The stylets are then removed and the catheter loop carefully arranged so that the catheter tip flexes slightly in systole and the

right atrial loop is neither so short that the catheter will pull out nor so long that the chance of wire breakage or ventricular perforation is increased. The threshold is checked again before the jugular vein is finally ligated around the catheter. A medial strain-relieving loop is then formed under the upper flap of the neck incision. This has the advantage of bringing the catheter down subcutaneously over the head or neck of the clavicle where motion is negligible. This minimizes the danger of early postoperative dislodgment of the catheter due to arm movement and late stress fracture of the wire if it crosses the more prominent central portion of the clavicle (figure 3).

A separate incision is made for the pulse generator. Its position depends on the available length of the catheter, which varies with the patient's habitus and heart size (figure 4). The catheter is pulled through a subcutaneous tunnel connecting the 2 incisions, and the upper incision is closed in layers.

The catheter is then connected to the pulse generator which is buried in a pocket developed under the lateral flap of the chest incision. The unipolar pulse generator is positioned with the ground plate facing anteriorly, away from the chest wall muscles to avoid twitching. The lower incision is closed tightly in layers without drainage.



FIG. 4. Drawing showing catheter tip wedged in trabeculae at apex of right ventricle. The incisions, catheter loop in the neck, and location of the pulse generator are also shown. From Smyth⁹ (courtesy C. V. Mosby Company, St. Louis, Mo.).

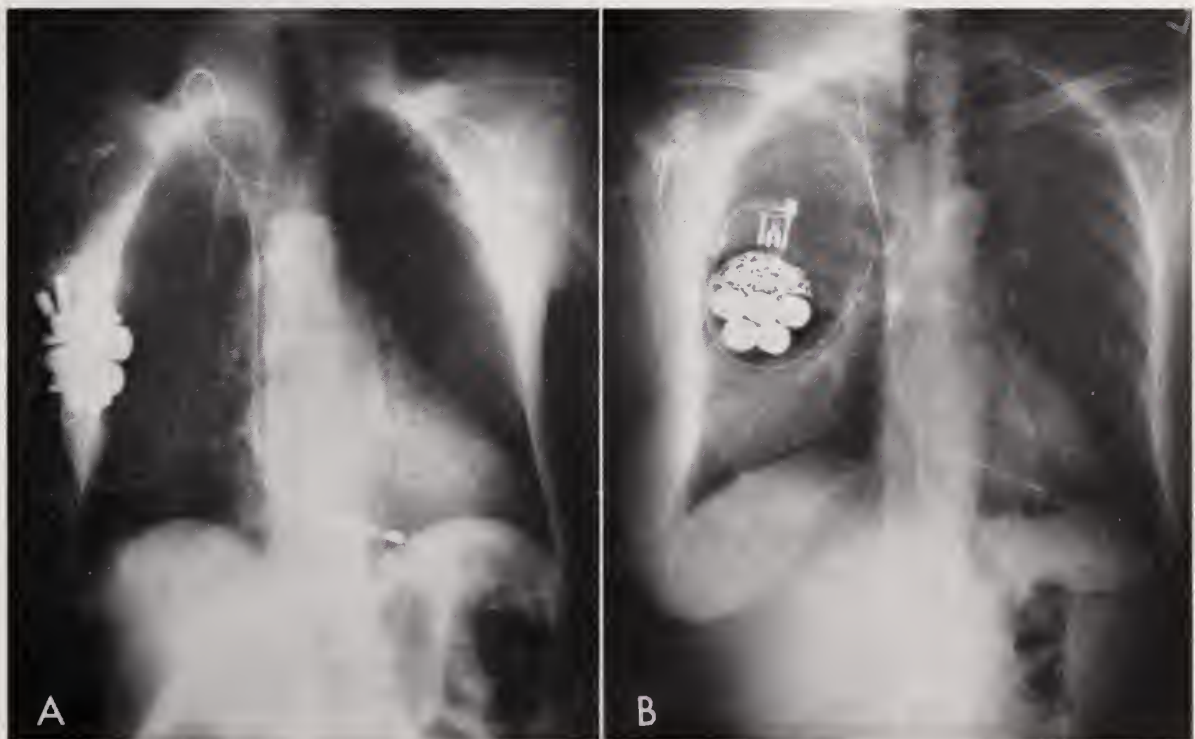


FIG. 5. (A) X-ray appearance of asynchronous bipolar system. (B) X-ray appearance of standby unipolar system.

The patient is monitored continuously for 24 to 48 hours, after which the catheter in the arm vein is removed and the patient is allowed out of bed. The postoperative X-ray appearance of the 2 systems is shown in figure 5.



FIG. 6. Bipolar catheter lying in right ventricle. Tip of catheter (cathode) is encapsulated.

Results

In the asynchronous group in a 2½-year period 11 pacemakers were inserted in 11 patients. There were no operative deaths, catheter dislodgments, or perforations. In one patient a troublesome left diaphragmatic systolic twitch was eliminated by reducing the amplitude of the pulse generator signal. One wire fracture occurred close to the pulse generator 1 year postoperatively. Two patients died 1½ years postoperatively of terminal illnesses unrelated to their heart block. One patient died unexpectedly 1½ years postoperatively. He had been in parasystole continuously since insertion of the pacemaker. Two pulse generators failed 1½ years and 2 years postoperatively and were replaced by a synchronous and a standby unit respectively. A third was replaced electively by a standby unit 2 years postoperatively.

In the standby group in the past year 17 pacemakers were initially inserted in 17 patients, and 4 pulse generators were inserted in other patients as replacements for asynchronous units. There were no operative deaths, catheter dislodgments, or perforations. In one patient wire fracture occurred close to the pulse generator 4 months postoperatively. One patient, with a highly unstable postinfarction arrhythmia with multiple premature ventricular contractions and intermittent asystole and arrest, died 1 month postoperatively

in ventricular fibrillation following a second myocardial infarction.

Twenty-four patients are alive and well, pacing satisfactorily.

In the 4 patients that died autopsies were obtained and the entire pacemaker system carefully examined. All pulse generators were found to be functioning satisfactorily. The catheter tips were encased in a thin fibrous capsule covered by endothelium (figure 6). There was minimal reaction to the foreign body (figure 7). The catheters were otherwise free in the bloodstream except for an encapsulated segment, about 1 inch in length, lying against the lateral wall of the right atrium (figure 8). In the patient who died 1 month postoperatively the catheter was covered by a thin fibrinous capsule throughout most of its intravascular course.

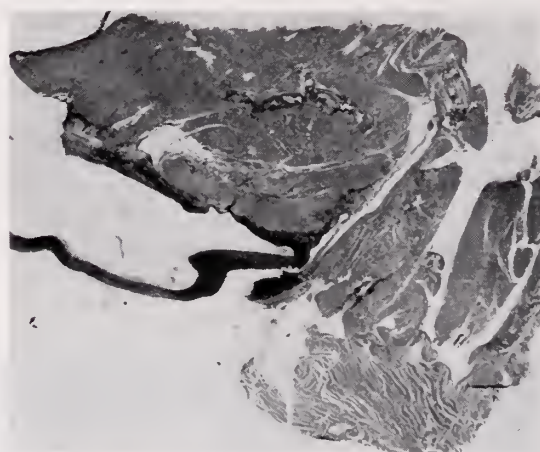


FIG. 7. Section showing electrode capsule. There is minimal fibrosis at point of electrode contact with the myocardium.

Discussion

We first used the transvenous pacemaker system in patients with refractory heart block but, like others,^{10, 11} soon adopted it as the method of choice for almost any patient requiring a permanent pacemaker. The system should probably not be used in children and younger patients since there is a possible risk of the future development of pulmonary hypertension from micro-emboli over a period of years, analogous to that seen with prolonged use of a ventriculoatrial shunt in the treatment of hydrocephalus.¹¹

Our experience with the asynchronous bipolar pacemaker has been entirely satisfactory in patients with stable heart block. We began to use the standby pacemaker for those patients with symptomatic bradycardia not associated with

permanent heart block. However, up to one-third of all patients apparently in complete heart block revert to normal A-V conduction at least intermittently following insertion of a pacemaker. The suggestion that some of these patients die from ventricular fibrillation due to parasystole,^{10, 12} supported by the unexplained death of one of our patients in parasystole, led us to reconsider the use of the asynchronous pacemaker. We now in-



FIG. 8. Encapsulated segment of catheter in lateral wall of right atrium.

clude in the indications for a standby pacemaker all the former indications for an asynchronous pacemaker. The standby pacemaker in a patient in stable heart block functions as an asynchronous unit. If A-V conduction returns, the synchronous standby pacemaker removes the danger, however small, of ventricular fibrillation resulting from competitive pacing.

The technique described, with a strain-relieving loop in the neck, has been valuable, we believe, in that we have had no case of catheter perforation, dislodgment, or breakage except at the junction with the pulse generator. The loop in the neck also

protects the intravascular catheter from the effects of pulse-generator mobility in a very thin patient. It is important to place the unipolar pulse generator with the ground plate facing away from muscle unless there is a thick layer of fascia over the muscle; otherwise a troublesome and sometimes persistent muscle twitch will develop. It is important that the catheter curve gently into the pulse generator, since fatigue fracture due to motion may occur at this point, especially in thin patients, as it did in 2 of our patients.

In general the transvenous endocardial pace-making system has proved very satisfactory with a low morbidity and mortality. Our current preference is for the synchronous standby system in all older patients requiring a permanent pacemaker.

Conclusions

The permanent transvenous endocardial pace-making system is the system of choice in all older patients with symptomatic bradycardia.

Careful positioning of the catheter with a strain-relieving loop in the neck is important.

The standby (demand) pacemaker functions in all types of symptomatic bradycardia, eliminating the danger of competitive pacing, and is, therefore, preferred to the asynchronous unit.

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Hyperosmolar Coma: A Medical Emergency

PAUL COHEN, M.D.,* NORMAN C. KRAMER, M.D., F.A.C.P.,†
AND ALVIN E. PARRISH, M.D., F.A.C.P.‡

ALTHOUGH THE BODY maintains plasma osmolality within a rigid physiologic range under normal conditions, a wide range of unstable osmolar states can exist for varying periods of time. In recent years a variety of hyperosmolar syndromes occurring with coma, hypernatremia, azotemia or uremia, and severe hyperglycemia without ketosis have been reported with increasing frequency in adults.¹⁻⁴ In general, these have been in patients with intracranial disease of varying etiology, in burned patients,⁵ and as a complication during nasogastric tube-feeding.⁶ Many of these individuals had not been previously known to be diabetic, although this is poorly documented. The precise factors which initiate this metabolic decompensation are obscure, and it seems probable that an abnormality in carbohydrate metabolism is preexistent in many, if not all, of these cases.

During the past several months we have had the opportunity to observe 3 patients with hyperosmolar nonketotic coma in patients with varying degrees of renal failure. The clinical courses and a brief discussion of the pertinent literature are presented.

Report of Cases

Case 1. S. M., a 65-year-old man, was admitted to a surgical service because of carcinoma of the right pyriform sinus. During a previous hospitalization he was found to have a fasting blood sugar of 115 mg./100 ml. and a urine containing a trace of albumin and glucose. He had a strong family history of diabetes. On this admission the blood urea nitrogen was 14 mg./100 ml., the fasting blood sugar§ was 126 mg./100 ml., and the urine had a specific gravity of 1.020 and a trace of

albumin. A partial laryngectomy and right radical neck dissection was performed. One week postoperatively a purulent discharge was noted about the tracheostomy site, and a culture revealed staphylococci coagulase-positive, and a paracolon bacillus. Several days later he became disoriented, combative, and lethargic. Blood chemistries at this time included a blood urea nitrogen of 168 mg./100 ml., blood glucose of 960 mg./100 ml., serum sodium of 162 mEq./L, chloride of 117 mEq./L, potassium of 6.0 mEq./L, and bicarbonate of 14 mEq./L. Urinary and serum acetone were negative on several determinations.

After 3 liters of 5 per cent dextrose in water and 75 units of regular insulin his serum sodium was 175 mEq./L, chloride 131 mEq./L, bicarbonate 22 mEq./L, and potassium 4.9 mEq./L. The serum osmolality was 413 milliosmoles/Kg. On the twenty-first hospital day peritoneal dialysis was performed because of progressive symptoms of uremia and oliguria. Despite this the patient became clinically worse. The subsequent hospital course was complicated by infection of the operative site, and he eventually succumbed to massive gastrointestinal bleeding on the thirty-sixth hospital day.

Case 2. M. M., a 67-year-old woman, was admitted to the hospital in a comatose state after having fallen out of bed. She had been well until approximately 2 months prior to admission, when she began losing weight. Two weeks prior to admission she was noted to be lethargic at times and seemed to be easily fatigued. The patient had been given digitalis and hydrochlorothiazide for several years because of congestive heart failure and hypertension. There was no family history of diabetes, and the patient was not known to be diabetic.

The patient was an elderly, dehydrated, comatose woman who appeared chronically ill. The temperature was 98° F; pulse rate 124 per minute; recumbent blood pressure 140 mm. Hg systolic and 82 mm. Hg diastolic; and the respiratory rate 24 per minute. There was no evidence of cranial trauma. The pupils were equal and reacted to light; bilateral cataracts were present, and the fundi were poorly visualized. The tongue and mucous membranes were dry. The neck was supple, and no abnormal pulsations or venous distention was noted. The respiratory and heart sounds were of good quality. The first heart sound was loud. The second sound was loudest at the second right intercostal space, and an atrial diastolic gallop was noted. The abdomen was flat, bowel sounds were decreased, and there was no organomegaly. The pulses were present in all extremities.

* Communicable Disease Center, United States Public Health Service, 1600 Clifton Road, N.E., Atlanta, Ga. 30322.

† Associate Professor of Medicine, George Washington University School of Medicine, 901-23rd Street, N.W., Washington, D. C. 20037.

‡ Professor of Medicine and Director of Clinical Research, George Washington University School of Medicine.

§ True Dextrose (Fister, H. J.: Manual of Standardized Procedures, 1950).

ties, and there was no clubbing, cyanosis, or edema. There was response only to strong painful stimuli. A slight left facial weakness was present, and the deep tendon reflexes were judged to be within normal limits. Pathologic reflexes were not present.

The chest X-ray film revealed cardiomegaly; the lung fields were clear. The electrocardiogram showed evidence of left axis deviation and left ventricular hypertrophy. Prominent U waves were present. The hematocrit was 48, the white blood cell count 16,200 per cu. mm. with a shift to the left; a trace of albumin, 4-plus glucose and a trace of acetone in the urine; the blood urea nitrogen 65 mg. per 100 ml., blood glucose of 1,014 mg. per 100 ml., CO₂ 17 mM./L, blood chloride 105 mEq./L, serum sodium 146 mEq./L, and serum potassium 1.8 mEq./L. The serum osmolality was 364 mOsm./Kg. and the U/P osmolar ratio 1.6. An aliquot of urine showed a sodium concentration of 22 mEq./L and a potassium of 21 mEq./L.

The patient received 75 units of regular insulin subcutaneously, and 1,000 ml. of 0.45 per cent saline was given intravenously. Potassium chloride, 100 mEq., was administered intravenously over a 2-hour period and was monitored with an electrocardiograph. After 2½ hours of treatment the blood glucose was 936 mg. per 100 ml., the CO₂ 17 mM./L, the chloride 103 mEq./L, sodium 147 mEq./L, and potassium 2.0 mEq./L.

Before the results of the final chemical tests were reported the patient developed a ventricular arrhythmia and died. A postmortem examination was not performed.

Case 3. M. J., a 41-year-old laborer, was admitted because of the sudden onset of left-sided hemiparesis. Six years previously he was found to have diabetes mellitus and required 20 units of N.P.H. insulin daily. A history of polyurea, polydipsia, weight loss of approximately 20 pounds, marked anorexia, and fatigue was noted for 2 months prior to admission. On the evening before admission an episode of severe headache and dizziness occurred without any loss of consciousness. In the morning left hemiparesis was present.

On admission the patient was alert and well oriented. The blood pressure was 190/90 in both arms in the recumbent position, the pulse rate 80, and the respiratory rate 22. The pertinent physical findings were limited primarily to the neurologic system and were interpreted as being consistent with right middle cerebral arterial thrombosis. The hematocrit was 43 per cent and the white blood cell count 4,600 with a normal differential. The blood glucose was 205 mg./100 ml., the blood urea nitrogen 31 mg./100 ml., creatinine 1.2 mg./100 ml., sodium 143 mEq./L, potassium 4.2 mEq./L, chloride 105 mEq./L, and plasma bicarbonate 18 mEq./L. The serum osmolality was 305 mOsm./Kg. of water.

The patient was given intravenous fluids and then oral feedings. On the tenth hospital day the fasting blood glucose was 245 mg./100 ml., the blood urea nitrogen 65 mg./100 ml., creatinine 1.5 mg./100 ml.,

and sodium 150 mEq./L. On the sixteenth hospital day the blood glucose was 510 mg./100 ml., the blood urea nitrogen 70 mg./100 ml., and serum sodium 152 mEq./L. An aliquot of urine revealed a sodium concentration of 8.0 mEq./L and a potassium of 60 mEq./L. The patient became lethargic and subsequently obtunded over the next 3 days. On the evening of the nineteenth hospital day he became comatose. The blood glucose was now 936 mg./100 ml., sodium 162 mEq./L, chloride 127 mEq./L, CO₂ 24 mM./L, and potassium 5.2 mEq./L. The blood urea nitrogen was 156 mg./100 ml., creatinine 5.2 mg./100 ml., and osmolality of the plasma 390 mOsm./Kg. of water with that of the spinal fluid 392 mOsm./Kg. of water. The urinary osmolality was 597 mOsm./Kg. of water and the urinary sodium 9.5 mEq./L with potassium of 47 mEq./L. Arterial blood gases revealed a PO₂ of 86, PCO₂ of 34 mm. Hg, and a pH of 7.4. Simultaneous values obtained for the spinal fluid revealed a PO₂ of 56, PCO₂ of 40 mm. Hg, and pH of 7.34.

During the first 12 hours of treatment 5,700 ml. of 5 per cent dextrose in water and 185 units of regular insulin were administered. Within 12 hours the serum osmolality decreased to 340 mOsm./Kg. of water; the blood glucose was 700 mg./100 ml. and the serum sodium 148 mEq./L. By the following evening the blood glucose was 110 mg./100 ml. and the serum osmolality 292 mOsm./Kg. of water. Several days after stabilization the patient was noted to have a fall in hematocrit to 29 per cent. A complete gastrointestinal evaluation failed to reveal the source of blood loss, although the stools were positive for occult blood. No evidence for hemolysis was noted, and a prompt response to hematinics was obtained. The patient was discharged and required only 20 units of N.P.H. insulin for control of his diabetes.

Discussion

Since the original description of a patient with non-ketoacidotic hyperosmolar coma by Sament and Schwartz,⁷ increased awareness of this syndrome has resulted in a number of case reports. By 1965 Danowski and Nabarro¹ had collected 32 documented case reports from the literature, and subsequently additional cases have been reported with increasing frequency.^{2, 3, 4} The incidence of this entity is unknown. Lack of recognition is in all probability the major reason for the paucity of reported cases. A similar syndrome has been noted to occur in burned patients⁵ and as a complication of nasogastric tube-feeding.⁶ It is probable that these constitute a variation of the same pathogenetic problem as noted in our patients and as described by others.

By definition the salient features consist of hyperglycemia and/or hypernatremia with resultant hyperosmolality, dehydration, azotemia, and the absence of ketoacidosis.

Although 2 of our patients were males, sex does not seem to be a predisposing factor. Only 13 of the 32 patients summarized by Danowski and Nabarro were males, whereas in another study⁴ 5 of 8 patients were males. Age appears to be an important factor, with the majority of patients being over 60. A history of diabetes mellitus has not been obtained with great frequency, but documentation in most instances has not been thorough. All 3 of our patients were apparently diabetics despite the fact that only 1 had been previously diagnosed and treated as such. This patient was 41 years old, whereas the other 2 were 65 and 62 years old respectively. It is well known that the insidious onset of diabetes mellitus in the elderly may be easily missed, since these patients are not usually prone to ketoacidosis. Although many case reports indicate that the patients were not known to be diabetic, histories of marked polydipsia and polyuria have frequently been noted. From this and other data it is possible that preëxistent hyperglycemia may be present in many, if not all, instances.

In this clinical setting, with elderly patients, many of whom have intracranial disease, severe infections or diabetes, fluid balance becomes a major problem. In our patients, time intervals of approximately 19 to 25 days existed before the non-ketotic hyperglycemic coma was manifest. This is similar to the experience of Halmos et al,⁴ in which 6 of 8 patients became severely hyperosmolar over a period of 1 to 3 weeks.

It would appear that as hyperglycemia develops, an insidious osmotic diuresis ensues leading to progressive dehydration. Avid salt resorption occurs in the nephron secondary to a marked increase in aldosterone secretion and is reflected by the very low urinary sodium and high potassium excretion as noted in 2 of our patients. This indicates that despite the severe dehydration and azotemia, distal tubular function persisted and tubular necrosis did not occur. The diagnosis of tubular necrosis can be made if the urinary sodium concentration rises in conjunction with a fall in the U/P ratio and a decrease in urinary flow. This sequence of events was noted in our second patient. Initially the urinary sodium concentration was found to be 10 mEq./L, the potassium 62.5 mEq./L, and the U/P ratio 1.2. On the following day, after prolonged hypotension the urinary sodium concentration increased to 53.5 mEq./L; the potassium decreased to 3.5 mEq./L, and the U/P ratio was 1.04.

The enhanced excretion of potassium probably prevents the occurrence of marked hyperkalemia

despite the severity of the catabolic state. According to Danowski and Nabarro, lowered plasma bicarbonates are uncommon in this syndrome unless lactic acidosis, diabetic ketosis, or uremic acidosis is present. Interestingly, patient number 2 had an arterial pH of 7.4 at a time when his plasma bicarbonate was 9 mEq./L and the blood urea nitrogen 300 mg./100 ml. This suggests that the arbitrary separation of patients into acidotic and nonacidotic groups strictly on the basis of plasma bicarbonates may be misleading without documentation by arterial pH. An alternative explanation for the apparently normal plasma bicarbonate levels might be that contraction alkalosis occurs.⁸ Perhaps a decrease in total bicarbonate does occur; however, the contraction of the extracellular volume is proportionately greater than the decrease in bicarbonate resulting in an apparently normal plasma bicarbonate level.

As previously noted, the occurrence of ketoacidosis in this syndrome is excluded by definition. Since the majority of the patients are elderly, in the 50- to 70-year range, they would not be expected to have the propensity to produce ketoacidosis. The early studies by Mirsky et al⁹ demonstrated an antiketogenic effect of a high carbohydrate diet in some ketoacidosis-prone diabetics. This antiketogenic effect of hyperglycemia has been attributed to the presence of adequate amounts of glycogen in the liver under these circumstances.¹⁰ Studies by Johnson et al¹¹ have suggested that dehydration per se has an antiketogenic effect. The role of dehydration in the prevention of ketosis in this group of patients is unknown. Of interest is the observation in the third patient that an apparent decrease in plasma bicarbonate was noted during the first 24 hours of rehydration with stabilization within the normal range.

The progressive mental deterioration and eventual coma have been attributed primarily to the severe hyperosmolarity.^{1, 5, 7, 12} Although it is not entirely clear whether the hypertonicity and/or the concomitant dehydration is the critical factor, observations with regard to the effects of hyperosmolarity on the central nervous system include the occurrence of coma and shock.¹³

The occurrence of azotemia or uremia has been noted in most of the cases, but has not been emphasized. Since we are dealing primarily with an elderly population, a significant diminution in the total functioning nephron population can be assumed.¹⁴ Other forms of renal disease including diabetic nephropathy and varying degrees of nephrosclerosis further reduce the renal reserve.

Under these circumstances rather marked deterioration of renal function can be expected when severe dehydration and catabolism occur. The level of BUN is probably not as good as the creatinine as an indicator of renal deterioration under these circumstances.¹⁵ The markedly negative nitrogen balance that occurs with uncontrolled diabetes together with dehydration in this group of patients may produce a disproportionate rise in BUN. This dissociation is best demonstrated by our third patient who maintained a significantly elevated BUN/creatinine ratio over a wide range of renal insufficiency and returned to normal range at the time of discharge. On the ninth hospital day the BUN was 65 mg./100 ml. and the creatinine 1.5 mg./100 ml. with a ratio of 43.3. By the nineteenth hospital day the BUN was 156 mg. and the creatinine 5.2 mg. The ratio decreased to 30. After 12 hours of insulin therapy and hydration the BUN decreased to 100 mg. and the creatinine to 3.0 mg., maintaining a ratio of 33.3. On subsequent days the BUN and creatinine decreased as did the BUN/creatinine ratio. At the time of discharge the BUN was 15 mg. and the serum creatinine 1.2 mg.

Therapy for hyperosmolar non-ketoacidotic coma must begin with the recognition that this is in fact a medical emergency. The mortality rate approaches about 50 per cent in several series.^{2, 4} In view of the fact that dehydration and hyperglycemia are of pathogenetic importance, therapy is aimed to reverse these. Large quantities of intravenous fluids and insulin are given. In the presence of hypernatremia, fluid replacement should consist of large volumes of 5 per cent dextrose in water or half normal saline. Solutions containing normal saline are not indicated in the rehydrating phase because of the presence of hypernatremia. If the serum sodium is in the normal range in the presence of marked hyperglycemia, this should be viewed with the same perspective.¹⁶ Hyperosmolarity occurs without producing pseudohyponatremia because of the marked intracellular dehydration. The administration of large volumes of intravenous fluids in this group of patients, particularly when hypotensive, should be monitored with central venous pressures. In severe cases as much as 17 liters of fluid have been given over a 36-hour period.¹⁷ In one case 11.5 liters of fluid were given over 12 hours.¹³ In general, the volume of fluid replacement will vary from patient to patient. Seldom will more than 5 liters be required during the initial 12 hours of therapy.

It has been suggested that the insulin require-

ments for non-ketoacidotic hyperosmolar coma can approach those used in the treatment of ketoacidosis.⁴ Halmos used an average of 509 units of regular insulin (range 320-600 units) during the first 24 hours. Others have suggested that the insulin requirements for non-ketoacidotic hyperglycemia are significantly less than those for ketoacidosis.¹³ Since the data available at this time vary considerably, interpretation is difficult. Differences in insulin requirement may be related to the initial level of blood glucose, the amount of dextrose and water given, the amount of glucose excreted in the urine, and the route of insulin administration as well as the insulin sensitivity of the individual patient.

Complications, other than death, include all those known to occur with the severely decompensated diabetic state. A high incidence of focal cerebral seizures has been reported by Maccario et al.³ These seizures apparently respond poorly to anticonvulsant therapy but respond well to rehydration and insulin. There is experimental evidence that hyperosmolarity per se can produce seizures¹⁸; however, it may be significant that the occurrence of seizures in diabetics with severe ketoacidosis is uncommon. Other complications included local and generalized infection, arterial and venous thrombosis, hypotension and shock, and tubular necrosis.^{2, 3, 4} In several reports pancreatitis was present at postmortem examination^{13, 19, 20}; however, it is not clear whether this is of etiologic significance or a secondary phenomenon.

Summary

The occurrence of non-ketoacidotic hyperosmolar coma is more common than is generally appreciated. The tendency to occur in the elderly and the lack of ketoacidosis make the diagnosis infrequently appreciated. Although severe dehydration is present, often it is not as striking as in other forms of acute dehydration. Despite this deceptive appearance, it may be severe enough to produce profound hypotension. Recognition of this clinical entity as a medical emergency is of singular importance because of the high mortality. Three new cases have been reported.

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Thoracic Outlet Syndrome: Diagnosis and Management*

JOHN M. KESHISHIAN, M.D., F.A.C.S.,† AND LARRY W. STANTON, M.D.‡

THE TERM "thoracic outlet syndrome" was first used by Rob and Standeven¹ in 1958 and constitutes a number of pathologic entities which are manifested by compression of the neurovascular structures at the superior thoracic outlet. Depending upon the causative mechanisms, these syndromes have been labeled cervical-rib syndrome, scalenus anticus syndrome, pectoralis minor syndrome, Wright's syndrome, costoclavicular syndrome, and others.

Formerly thoracic surgeons were not necessarily consulted for problems in this area, but because of their experience with vascular lesions and the anatomic complexities of the area they may be peculiarly qualified to deal with these syndromes.

Many of these disorders can be severely disabling but usually respond to correct diagnosis and surgery. Unfortunately, as we all know, operations for these disorders in the past were on a helter-skelter, hit-and-miss basis resulting in the low regard held for any operative procedure and for the large number of poor results.

As pointed out by Clagett,² a review of the anatomy of this area reveals a number of narrow passageways for these structures to negotiate. It is surprising that symptoms do not occur more frequently. Although no single factor can be selected as the guilty one, it seems fairly obvious that in most instances loss of tone of the suspensory muscles of the shoulder girdle and subsequent sagging may lead to the development of the syndrome. It is true that trauma and systemic diseases with swollen nodes and tissues may narrow the costoclavicular space. However, since the majority of patients are middle-aged, especially women, it seems that shoulder girdle sag is an important factor.

Symptoms within the syndrome vary greatly. For purposes of clarity it may be appropriate to divide them into 3 groups, but there may be combinations which implicate more than 1 group: 1. Compression of nerves causes pain associated with weakness, numbness and paresthesias. Muscular atrophy may be present and involve forearm muscles. 2. Compression of arteries causes diffuse pain, weakness, coldness, clamminess, and easy muscular fatigue. Pulsations may be diminished or absent and can be damped by position or maneuvers. In advanced cases, ulceration, gangrene and Raynaud's phenomenon may be seen. 3. Compression of veins causes aching, tired limbs, swelling, cyanosis, edema of the arm, and evidence of distended collateral veins around the shoulder and upper part of the chest.

Diagnosis

Throughout the years since the recognition of these various entities multiple clinical tests have been devised in an attempt to localize the offending lesion. These former tests, for the most part, consist of reproducing the patient's symptoms and measuring the damping of the pulse in the affected extremity by various maneuvers of the shoulder girdle, changing the position of the head and listening for murmurs. Frequently, however, intrinsic vascular disorders such as arteriosclerosis, thrombosis, Takayasu's disease, or periarteritis nodosa may produce the same symptoms. Because of the limitations of the clinical tests for these syndromes, and to rule out the possibility of intrinsic vascular disease, we think it is imperative to evaluate these patients with arteriography after the preliminary history and physical examinations and routine chest films.

Selected forward arteriography is an ideal way of learning the status of the subclavian artery. By this means one can almost certainly localize the site of a lesion. By the introduction of a small catheter via the femoral artery with the percutaneous Seldinger technique, it is possible to place the catheter tip in the respective innominate or subclavian vessel and evaluate the artery in

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† Assistant Clinical Professor of Surgery, George Washington University School of Medicine; office: 2520 L Street, N.W., Washington, D. C. 20037.

‡ Assistant Professor of Radiology, George Washington University School of Medicine, 901-23rd Street, N.W., Washington, D. C. 20037.

various positions. In addition to injection of radiopaque material and radiographic visualization, it is also possible to inject radioactive material and assess the volume flow within a given vessel.

By these methods it is possible to determine the site of a block and hemodynamic deficits. Lang³ has reported flow reductions of 60 per cent in certain of the scalene-muscle compression syndromes. With preoperative films and flow rates for baselines appropriate operations were done and reevaluated. Out of 131 cases only 17 cases were not improved.

The operations for these compression syndromes are dictated largely by the arteriographic findings. If a prominent cutoff is seen just as the scalene tunnel is entered, scalenotomy will usually suffice. However, if it appears that the artery is being compressed by the first rib as well, this rib should be removed. Similarly, any other constricting bands demonstrated on the contrast study should be investigated and severed. Generally these are tendons of the pectoralis minor muscle group.



FIG. 1. Case 1. Right subclavian artery with arm in the neutral position.

Roos⁴ has championed the axillary approach to these structures. He feels that since the first rib is involved in all cases of nerve and artery compression, it should be routinely removed.

In general, therefore, there seem to be 3 surgical approaches to the outlet syndrome. These depend on the surgeon's preference and experience: posterior approach (Clagett), axillary approach (Roos), and anterior approach (Lang).

Our personal preference is a combination of scalenotomy and removal of the first rib by an axillary approach unless another obstruction by pectoralis tendon is seen. In that situation an additional approach will be necessary. We⁵ have had a modest experience with 14 cases of the tho-

racic outlet syndrome. Five cases have been chosen for illustration.

Illustrative Cases

Case 1. B. D., a 21-year-old white female college student had symptoms of numbness and tingling in the right upper extremity after prolonged periods of playing the piano or of using the typewriter. She had a slightly narrowed anteroposterior diameter of the chest, but there was no other obvious chest deformity. The radial pulses were equal bilaterally in the neutral position. Murmurs were not heard over the supraclavicular area. On elevation of the arm there was a slight damping of the pulse in the right radial artery, and the patient's symptoms were reproduced after a short period of time. On extreme hyperabduction of the arm there was almost complete obliteration of the pulse and the patient's symptoms were rapidly reproduced. Figure 1 demonstrates the right subclavian artery with the arm in the neutral position. There is no evidence of a filling defect in this position. The patient's arm was then placed in a hyperabducted position and a second injection made. Figure 2 demonstrates the narrowed segment of the subclavian as it passes between the clavicle and the first rib and shows quite dramatically the decreased flow peripheral to this point. In addition, it can be noted that there is an increased flow into the vertebral artery on that side.

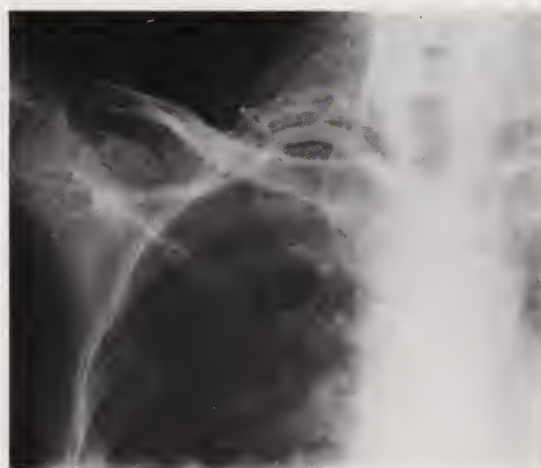


FIG. 2. Case 1. Demonstrating narrowed segment of subclavian artery with arm hyperabducted.

At operation, the first rib was resected through an axillary approach. During the operation it was possible to demonstrate the encroachment of the first rib against the vessel which in turn was compressed against the clavicle. Postoperatively there was complete regression of the patient's complaints with no further damping of the pulse in any position. The patient stated that she was now able to type rapidly without arm fatigue.

Case 2. A. B., a 21-year-old white man, was found to have a prominence in the left supraclavicular region



FIG. 3. Case 3. Discogram showing posterior extravasation of dye simultaneously reproducing patient's symptoms.

on a routine physical examination. The radial pulses were bilaterally equal in the neutral position, but with the left arm hyperabducted the radial pulse on the left became greatly diminished. In addition, a bruit was heard over the left apical region. A routine chest film demonstrated an anomalous first rib on the left. Although the patient was asymptomatic the possibility of an aneurysmal dilatation of the subclavian artery, possibly secondary to compression from the anomalous rib, was entertained, and the patient was admitted for arteriographic evaluation. With the arm in the neutral position there was no evidence of aneurysmal dilatation, and no stenotic lesion involving the subclavian was demonstrated. The arm was again placed in the hyperabducted position and a second injection made. A concentric impression upon the subclavian artery as it passed between the anomalous rib and the clavicle was clearly demonstrated. In the absence of symptoms and with the exclusion of aneurysmal dilatation, no further treatment was recommended.

Case 3. K. S., a 42-year-old white woman, was admitted for diagnostic evaluation of weakness and paresthesias in the right upper extremity following neck injury in an automobile accident. The paresthesias were exaggerated by elevation of the extremity. No pulse deficit was demonstrable by the routine maneuvers. To

eliminate the possibility of these symptoms being on a vascular basis, arteriograms were made. They demonstrated no significant lesion in the neutral or hyperabducted positions. A cervical myelogram was then performed which demonstrated a central type defect at the C₆-C₇ interspace. A discogram demonstrated degeneration of this disc with posterior extravasation of the dye which reproduced the patient's symptoms (figure 3).

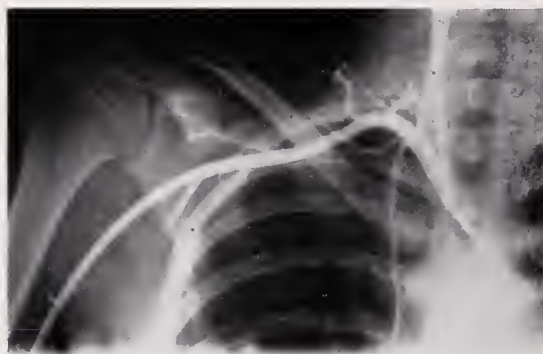


FIG. 4. Case 3. Arteriogram in neutral position showing no impingement on artery. A serial arteriogram with arm in abduction also showed no obstruction.

It had been suspected elsewhere that obstruction of the subclavian artery was the cause for her complaints, and an operative procedure had been contemplated. The arteriogram (figure 4) showed clearly that this condition did not exist. After anterior fusion of the cervical vertebrae the patient's symptoms subsided.

Case 4. F. C., a 70-year-old white woman, was found to have absent pulses in the right upper extremity on a routine physical examination. She had been seen by her physician originally because of numbness and fatigue of this extremity on exertion. She was right-handed. She attributed her symptoms to the fact that she was en-

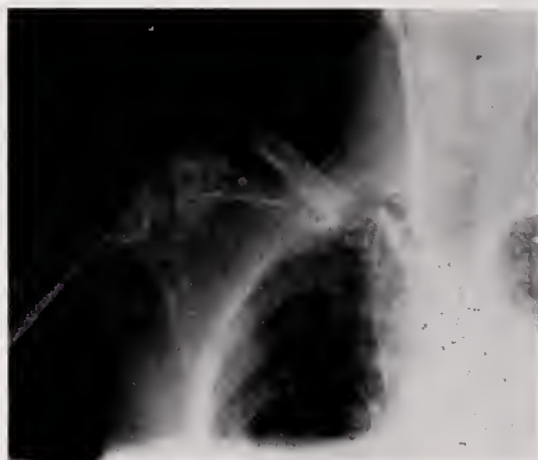


FIG. 5. Case 4. Arteriogram showing occlusion of subclavian artery just beneath clavicle in scalene tunnel.

gaged in tedious bookwork which required lifting and carrying a number of heavy books daily. An arteriogram was performed which demonstrated complete occlusion of the right subclavian artery distal to the take-off of the vertebral artery (figure 5). Operation is planned for relief of this obstruction. Although this is most likely obstruction due to arteriosclerotic involvement, its location in the scalene tunnel suggested the possibility of occlusion secondary to long-term compression.



FIG. 6. Case 5. Prominent veins in right arm seen with tangential light. Even though arm is elevated, veins remain distended.

comfortably, but was able to fly his own plane a few days later, resting his arm from time to time. His arm felt better in the elevated position. There were prominent veins on the dorsum of the hand and in the arm (figure 6). It was suspected that he had either sustained an acute muscle tear with hematoma formation or a sudden thrombosis of the vein from effort. Venograms showed a complete occlusion of the supraclavicular portion of the axillary vein with collateral formation (figure 7-A). Infrared films demonstrated the rich collateral network (figure 7-B). Because of a delay of 15 days before surgical consultation, operation was not performed. There has been great improvement on conservative care including the use of anticoagulants and a Jobst sleeve.

Discussion

The diagnosis of other forms of thoracic outlet syndrome usually depended upon the assessment of the pulse following a number of maneuvers described by Adson.⁶ It should be pointed out that Adson's maneuver will produce a positive test in many types of the thoracic outlet syndrome and, in fact, in some people without the syndrome. Unfortunately, patients found to have a positive test were operated upon, occasionally with very

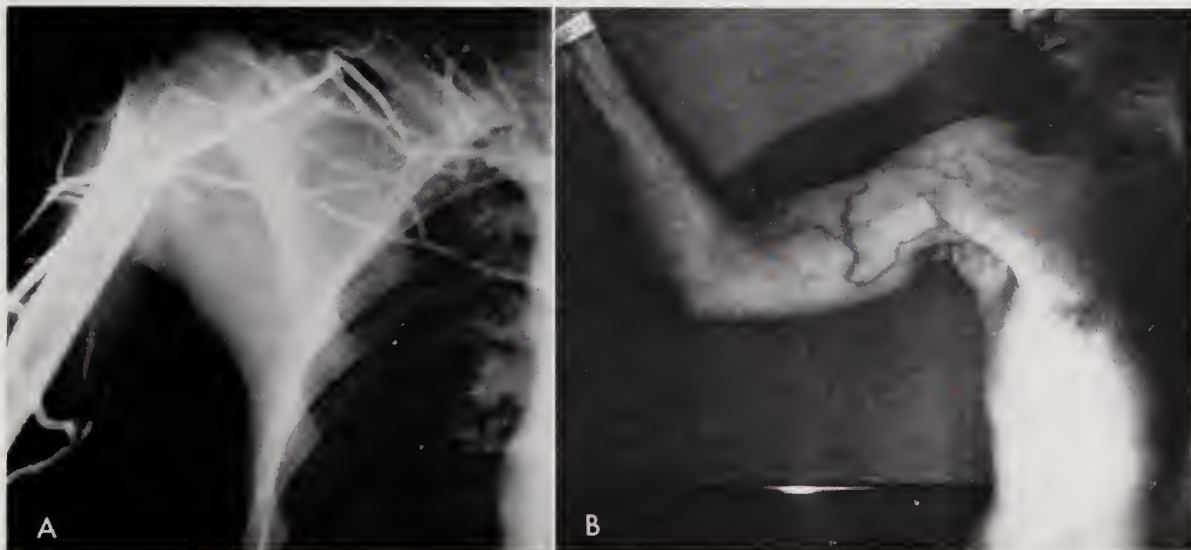


FIG. 7. Case 5. (A) Venogram showing cutoff of main drainage from right arm just over clavicle. Note extensive collaterals leaving from this point. (B) Instant infrared photograph (Polaroid®) showing diffuse venous network in right arm. Comparison with control of opposite side shows striking difference.

Case 5. A. M., a 35-year-old male realtor, had been carrying cement blocks around his newly finished home when he had a sudden onset of pain and gradual swelling of his right arm. That night he began to have numbness and paresthesias in the right upper arm and fingers. His physician found the arm swollen, tense, and somewhat discolored. The patient was unable to make a fist

poor results. As suggested by Lang,³ arteriography is the only technique which lets us diagnose the presence of not only one but multiple obstructing lesions in the vessels traversing the thoracic outlet.

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The Herpes Simplex Virus and the Nervous System

Review of the Literature

F. DONALD COONEY, M.D.*

HERPES SIMPLEX VIRUS (HSV) is one of the most common infections of man. Antibody to this virus is found in some 80 to 90 per cent of adults, most of whom give no history of clinically recognized herpetic disease.^{1, 2} In proportion to this high rate of contact, the actual involvement of the central nervous system (CNS) is rare.³ In the literature up to 1930 there were 5 reports of recovery of the herpes simplex virus from the brain in cases of encephalitis, but the significance of this was questioned for years. By 1941 the virus was further linked with its isolation in a 4-week-old infant, whose brain revealed the histologic picture of encephalitis, with Cowdry type A intranuclear inclusion bodies.⁴ There is extensive evidence to equilibrate these bodies with viral involvement, although they may be found in lead and bismuth cases.

The purpose of this discussion is to point out herpes involvement of the CNS with the emphasis on encephalitis. Ideally, to get a broad view of infections of the CNS and the place of the herpes virus in it, the following outline is presented⁵:

1. Infections by bacteria and fungi
2. Infection by Rickettsia (Rocky Mountain spotted fever, etc.)
3. Invasion by parasites, Toxoplasma, amebae, etc.
4. Virus disease
 - a. Benign lymphocytic meningitis (psittacosis, mumps, Coxsackie infections, lymphocytic choriomeningitis, measles, and herpes simplex)
 - b. Specific viral etiology (poliomyelitis, rabies, herpes zoster, encephalitis lethargica, St. Louis encephalitis, Japanese encephalitis, equine encephalitis, Russian spring-summer encephalitis, herpes simplex encephalitis)

c. Uncertain etiology

- (1) Acute necrotizing encephalitis (?herpes)
- (2) Subacute encephalitis (?herpes, ?measles, rubeola)
 - (a) Dawson's subacute leukoencephalitis
 - (b) Van Bogaert subacute leukoencephalitis
- (3) Subacute encephalitis in later life
- (4) Cytomegalic inclusion disease
- (5) Progressive multifocal leukoencephalopathy

From this outline it can be seen that herpes appears in different clinical settings. It is important to recall the division of viruses into neurotropic, pantropic, and viscerotropic. The neurotropic ones have a special affinity for nervous tissue, e.g., the poliomyelitis and rabies viruses. The viscerotropic are known chiefly for the effects on organs outside the CNS, which is rarely attacked. When nervous symptoms occur they are more often due to involvement of the meninges as in aseptic or benign lymphocytic meningitis than to damage of nervous tissue parenchyma. When cases of acute encephalitis are caused by viruses such as herpes the results are severe. There is evidence that herpes is involved in acute necrotizing and subacute encephalitis in addition to those listed. This conclusion only recently has been made more acceptable.

In order to understand the disease, first we shall have to consider the characteristics of the virus, its epidemiology, and its portal of entry.

Characteristics of the Virus

The virus measures from 165 to 180 millimicrons in size and has a DNA core and a protein capsule.³ It also has an outer lipid-containing envelope which is derived from the host cell membrane and is therefore ether-soluble. Only 1 antigenic type is known, but subgroups have been demonstrated. It has a predilection for tis-

* Resident in Neurosurgery, George Washington University Service, Washington Hospital Center, 110 Irving Street, N.W., Washington, D. C. 20010.

sue derived from embryonic ectoderm and most commonly attacks skin, mucous membranes, also the eye and the CNS. Primary infections may be either apparent or subclinical. It enters chiefly through the mouth, but sexual contact or abraided skin at any site may serve as the portal.

The characteristic lesion is the vesicle. The primary infection is associated with a specific antibody response and, thereafter, despite the presence of the neutralizing antibody, various exogenous or endogenous stimuli may induce activation of the virus either with or without the appearance of clustered, vesicular lesions characteristic of herpetic disease.

The incubation period for primary herpetic disease ranges from 2 to 12 days, usually falling between 2 and 7. The primary infection results in disease in about 10 to 15 per cent of the cases.⁶ These are the dermal manifestations. Some state the incidence as much less. The primary infection can also initially involve the CNS. After the primary infection, circulating antibodies appear and tend to attain a constant level.⁷ Once the antibody level is attained, any recurrent episode is not associated with an increase in antibody. Exceptions to this have been reported.⁸ Therefore, failure of a rise in titer does not rule out the disease. Some articles mention the possibility that it is more common in lower socioeconomic groups living in crowded conditions and with poorer sanitation, but there is no support for this. Why a patient has recurrent and latent infection in the presence of the antibody is not known. There are several hypotheses, one being that it exists as a previral particle remaining in the cell (not being affected by the antibody). It is known that adding antibody to HeLa cell cultures infected with the virus does not eliminate the virus.⁹ This aspect of the disease is unsolved and would seem to be connected to many diseases of unknown etiology.

The recurring nature of herpes simplex in the presence of the antibody was reported in 1930.¹⁰ The recognition that the virus once contracted appeared to persist for life in a unique relationship between virus and host was appreciated in 1939. As early as 1938 Perdrau¹¹ observed a spontaneous acute encephalitis in rabbits with onset 6 months or more after they had recovered from an intratesticular inoculation of live herpes virus. Afterwards he passed the affected rabbit brains to non-affected rabbits and produced acute herpetic encephalitis. It was shown in animal experiments as in man that stress precipitates the recurrence of herpes. If rabbits are sensitized to egg protein infected with herpes virus, an acute encephalitis

can be precipitated months later by giving egg protein and causing an allergic reaction.

Portal of Entry

The virus path to the CNS is not completely understood. In 1920 Doers observed that experimentally produced keratitis in rabbits progressed to encephalitis in some.⁵ Since it was known also that encephalitis followed intravenous injection it was believed that it was spread by the hematogenous route. In 1923 Goodpasture¹² suggested that the virus reaches the CNS via the axon cylinders. Later studies in mice¹³ with the use of the fluorescent antibody technique showed hematogenous and neural spread from intraperitoneal injection and also direct subarachnoid-space invasion from intranasal infection via the olfactory and trigeminal route. (It is known that surgery of the sensory root for trigeminal neuralgia may lead to recurrence in the path of its distribution. This will be gone into later, but it supports the idea that the virus holes up in the gasserian ganglion.)

The symptoms of brain involvement are confusion, headache, fever, focal signs (as a positive Babinski reflex), asymmetry, and seizures. Meningeal signs are not necessarily present, and occasionally psychological behavioral changes bring on the disease. This can proceed to coma. There may be recurrent periods of hyperactivity. Surviving patients usually have neurological residuals although this is not the rule. Mental retardation is not uncommon. Defects with smell and memory loss are frequent. Death may occur.

Traditionally, herpetic encephalitis is thought of as a disease of the cortex, but it involves central white matter and basilar structures. The lesions are asymmetrical and generally affect the orbital and temporal areas more severely. The necrotic areas may progress and coalesce and result in areas of cavitation. Marked local swelling and/or hemorrhage in these places may produce a mass lesion. Perivascular cuffing with mononuclear cells and characteristic type A (Cowdry) intranuclear inclusions are evident.

In order to diagnose the disease along with the histological picture mentioned, tissue obtained ideally antemortem should be used for culture, along with the spinal fluid, the fluorescent antibody technique performed, and the checking of the usual antibody level, an increase in the latter being a significant sign. The actual isolation of the virus is the most important, the other results being confirmatory. Time relationships can affect

the result of a test¹⁴; positive cultures can be obtained at one stage of the disease and not at another.

Only recently has the association of herpes and acute necrotizing encephalitis become more clear. It has been shown that in 7 cases of acute necrotizing encephalitis, with death in 6, electron microscopy revealed viral particles characteristic of herpes simplex. Inclusion bodies were not found in 6, one of which had biopsies done at different intervals; the seventh showed inclusion bodies and positive cultures, but later a biopsy revealed neither. Negative cultures obviously cannot be used to eliminate the diagnosis.⁸ This same study supported the idea that formalin-fixed material can be used in electron microscopy for viral studies. Some material was used that was fixed for more than 5 years. Acute necrotizing encephalitis can cause an acutely expanding lesion in the temporal lobe. Therefore, the differential diagnosis may include brain abscess and/or tumor.¹⁵ Two other viruses have been thought to be etiologically connected with acute necrotizing encephalitis, viz., those of lymphocytic choreo-meningitis and psittacosis. The supporting data, however, are poor.⁸ Most of the textbooks refer to Brehave of van Bogaert's laboratory to support that herpes was not the cause. In 24 cases the virus was not recovered.⁵ This was before 1960, but since then this has been done.

Some investigators¹⁶ using fluorescent antibody techniques propose that herpes simplex is related to the subacute leukoencephalitis of Dawson and van Bogaert. The initial clinical picture is the same but death occurs in 6 to 12 months. Recent viral electron microscopy studies have produced evidence to link the measles (rubeola) virus to the subacute group.¹⁶

Since herpes recurs in the absence of external infection, the question next is, where does it hole up? It cannot be found at sites of previous infection in the skin. As mentioned earlier, there is evidence that the virus remains localized latently in the sensory ganglion between recurrences. Sectioning of the trigeminal sensory root is followed by facial herpes on the same side in patients with an antibody titer to herpes.¹⁷ It occurs more often if the root is sectioned close to the ganglion, less often if it is sectioned near the pons, and even less if the peripheral nerve is injected with alcohol beforehand.¹⁸

In laboratory animals infected with the virus recurrences can occur with a zoster-like pattern.¹⁹ Herpes simplex can cause zoster-like neuralgia, and excision of the skin in the previously involved

dermatome does not prevent recurrences. An acceptable hypothesis is that during primary infection both epithelial cells and sensory nerve endings are involved. The virus spreads along the endoneural cells to the ganglion and remains there in some occult or pre-virus form until reactivated. It then spreads back down the axon to the epithelium to produce the lesion in the skin. The fact that the mouth, perioral skin, and genital areas are most common sites of primary infection is consistent with the high incidence of recurrence in these areas, the trigeminal and sacral roots being involved. These findings suggest that the latent virus is usually associated only with neurons innervating the site of the first infection. Why it stops short of the brain most of the time is not known.¹⁶

Can the virus be in the spinal fluid without symptoms? There have been some cases in the literature, but usually there is a question of sub-clinical CNS involvement.

Treatment and Survival

In regard to survival and possible treatment of herpes encephalitis in all its forms it must be understood how difficult it has been in the past to make the specific diagnosis of herpes. In a 3-year study at the University of California,²⁰ of 52 patients with possible CNS herpes the diagnosis was thought to be secure in only 18. Four of the 18 patients died; another 3 were excluded as having only benign lymphocytic meningitis. Five of the 11 patients who survived had no residual damage, 3 remained institutionalized, and 2 had mild memory loss with hemiparesis and behavior disorder in one of them. This study indicated that patients could recover, but in the entire group of 18 patients only 1 of the survivors had been in coma and none had acute necrotizing encephalitis. None was actively treated.

A very important contribution was made by A. O. Evans and his group from the Cardiff Royal Infirmary.²¹ This represented the first patient with herpes simplex encephalitis, actually acute necrotic encephalitis, to be treated successfully with a specific drug. Herrman²² in 1961, using antiviral drugs, reported that plaque formation by DNA-containing viruses of vaccinia and herpes simplex was inhibited by 5-iodo-2'-deoxyuridine, the inhibition being reversed by thymidine. He used idoxuridine in a case of herpes virus encephalitis from which recovery was thought to be doubtful. He observed an 8-year-old girl who had been decorticate for 6 weeks and unconscious for 48

days. Brain biopsy was then performed and followed by the first of 5 intravenous doses of idoxuridine. Thirty-six hours later she was conscious and would open her eyes and protrude her tongue on command. During the following week she began to recognize members of her family, to speak, and to regain power in her paralyzed limbs. After 1 month her progress leveled off, and she made an adequate recovery. The diagnosis was confirmed and demonstrated by isolating the virus from the brain biopsy. The virus in the culture could be identified in 3 days. It was subsequently neutralized by specific antiserum. In the biopsy intranuclear inclusion bodies were not seen. The virus was not cultured from the spinal fluid. Animal experiments with idoxuridine have given similar results.

Idoxuridine has been used in the treatment of advanced cancer. Some side-effects are leukopenia and alopecia. The action of the drug is not completely understood. It is believed either to inhibit viral DNA-polymerase or to be incorporated into viral DNA, thereby leading to faulty transcription of messenger RNA. The drug may compete with thymidine in the synthesis of DNA. However, as it stands now, it should be reserved for treatment only in severe DNA virus infections and cancer patients. The drug was used for 7 days in a middle-aged man who also had an external decompression.²³ Only recently from Germany (University of Frankfurt) May et al²⁴ reported 5 cases diagnosed by increasing titers and cultures (one from a brain biopsy), but no mention of possible use of idoxuridine was made (4 died). The article emphasized, however, the role and ease of isolating the virus in culture. HeLa (permanent) as well as amnion cells was used.

A most interesting report which sets the pattern for the treatment of acute necrotic encephalitis pertaining particularly to surgery in those cases with temporal lobe masses was made by Marshall of Glasgow.²⁵ He emphasized early diagnosis by a combination of radiologic, pathologic, and virologic methods in order to successfully treat this disease. As in the study¹⁵ referred to earlier, when herpes at its worst appears as acute necrotizing encephalitis, the results are fatal. In a series reported by Bennett et al²⁶ all 16 patients whose clinical pictures were those of a space-occupying lesion in the temporal lobe died. This was before idoxuridine was entirely appreciated. Death is due to severe brain damage and increased intracranial pressure. Marshall's case is worthy of detailed description.

A boy of 13 years of age was ill 12 days prior to admission to the Neurosurgical Institute after he had been struck on the right temporoparietal region by a golf ball; he did not lose consciousness and complained only of dizziness. During the next 4 days he had headaches, and on the fifth day after the injury he had a right-sided convulsive seizure followed by a generalized one. On admission to a local infirmary he was conscious and coöperative, having only a right Babinski sign. Lumbar puncture disclosed a normal pressure and normal spinal fluid (cells 2 per ml.). Protein was 25 mg., consistent with a glucose of 74. On the second hospital day he had another major convulsive seizure. An electroencephalogram showed gross slow waves over the right hemisphere with a focal disturbance in the right anterior temporal lobe. Over the next 3 days the boy became progressively more drowsy, and a fever of 102° F developed. Lumbar puncture on the eleventh day showed normal pressure with 279 lymphocytes per ml., protein 70 mg., consistent with glucose of 76 mg. On the twelfth day, when he was admitted to the Neurosurgical Institute he was drowsy but gave a clear history. He developed hemiparesis and hemianopsia and nuchal rigidity, but there was no papilledema. The admission diagnosis was intracerebral hematoma from the injury. The right carotid arteriogram revealed a temporal avascular mass, which was then trephined with the intention of evacuating the expected hematoma. No hematoma was found. The brain was necrotic and soft, characteristic of acute necrotizing encephalitis. Specimens were sent for examination and virus culture. Coma developed. Subsequent spinal fluid and blood were positive for herpes by the immunofluorescent Ab method. Complement fixation was positive. The histologic picture was that of acute necrotizing encephalitis. Culture confirmed the diagnosis. On the morning of the fifteenth day the boy would only respond to painful stimuli, had left hemiparesis, early papilledema, and a moderately dilated right pupil. It was decided to do an external decompression and treat with idoxuridine. The dura was left opened and the bone flap not replaced. (Dosage of idoxuridine in article.) About 36 hours later the level of consciousness improved greatly, and the patient was up and around by the tenth postoperative day. He returned to school with a slight apraxia in his left hand. The later brain biopsy specimen did not yield a culture of the virus.

Early definite diagnosis is essential. The effect of this drug seems to be dramatic, but more work will have to be done. The neurosurgeon must be suspicious of this disease as a cause and must be prepared to send for viral cultures. The armamentarium for this, antibody studies, and possible fluorescent antibody studies should be available.

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(Continued on page 274)

Acute Cerebral and Pulmonary Effects of Air Pollution in Washington, D. C.*

ELOISE W. KAILIN, M.D.†

THE MEDICAL SOCIETY of the District of Columbia has taken formal notice of air pollution in this metropolitan area as a contributing cause to asthma, emphysema, and cancer, as well as other kinds of illnesses. People who are affected in these ways are usually ill for years and die often without any realization that air pollution was a very important factor in their illness.

The doctors of the Public Health Service tell of their painstaking studies of the health of large groups of people living in more polluted areas as compared with less polluted areas. They will draw on this kind of data and on the hundreds of laboratory studies which have been made to learn the effects of various air pollution chemicals on living tissues. This basic work has unequivocally demonstrated that there are chemical entities in our polluted air which have harmful biologic effects. But today, for my part, I am going to try to give you some idea of what has already happened to your neighbors.

There are 2 groups of patients who are affected dramatically and acutely by exposure to polluted air. One group suffers from lung diseases such as bronchial asthma and emphysema. In another group effects on the nervous system produce the primary disability. Persons affected in this way experience much the same effects as glue-sniffers or persons who have drunk too much alcohol. Muscular control and strength are diminished. They can't walk straight. They can't think clearly.

Illustrative Cases

Case 1. This is an asthmatic man whose asthma attacks since early childhood have led to many hospitalizations and to moderately advanced emphysema. He has had the last rites of his church some 6 or 7 times as a consequence of severe attacks. He came here from New York City 4 years ago. Over a 2-year period, living first in Bladensburg, Maryland, and then in Alexandria,

Virginia, he continued to have severe bronchial asthma, waking up every night for medication. Even so he obtained only partial relief night or day. As my patient he has had 2 hospitalizations for his asthma. In the second the asthma was of life-threatening extent. I nearly called the priest. He has moved to a more distant suburb now and has equipped his house with all-electric utilities. This is important because gas stoves and furnaces emit unburned, petrochemical gases into the home. He avoids traffic fumes as best he can, and with this much control of air pollutants his asthma has not been nearly as severe and he has required no further hospitalizations.

Case 2. A woman I shall call Mrs. Smith is another asthmatic patient who suffers greatly from air pollution. Each time she ventures into downtown Washington from her suburban home her asthma flares up. She has to carry an adrenalin nebulizer with her on such trips. One day on a trip into Washington she was caught in a cloud of exhaust fumes from a bus. Her bronchial spasm suddenly became such that she could barely move the air in or out of her lungs. She staggered with help to the side of a building and after a while she was able to call her husband to drive her back home because she couldn't manage her car.

The frequency of such cases is part of the reason that the Medical Society has recommended better controls for exhaust from motor vehicles. These are 2 examples of cases in which the primary effect of air pollution was in the lungs.

Case 3. For 5 years before coming to me a woman I shall call Jane had been aware that automobile fumes caused intense burning in her eyes, throat, and deep in her chest. She recalled vividly an episode when exhaust fumes from a diesel-engine yacht caused her eyes and throat to burn intensely, her eyes remaining swollen until the next day. Over the next 2 years she became increasingly aware of these symptoms while driving to work in downtown Washington. As the effects of the fumes became more severe she noticed that her balance and thinking were affected for several hours after she arrived in her office and again after her return home. She found that she couldn't do her work as a science writer because impaired thinking caused her to make many mistakes. Her symptoms soon included loss of motor control; she staggered and her tongue stumbled over words. Although she is a teetotaler, the rumor

* Statement made before the Air Pollution Abatement Hearings, December 14, 1967, at the Sheraton-Park Hotel in Washington, D. C.

† Assistant Professor of Medicine, Howard University College of Medicine; office: 836 Bonifant Street, Silver Spring, Md. 20910.

spread in her office that she was an alcoholic. Eventually she lost her job. Now she is working as a sales agent. Jane is able to live and work in the less polluted suburbs but she has a sore throat most of the time. The laboratories cannot find a germ to account for this. Symptoms of cerebral impairment such as Jane had reported often are considered to be of psychoneurotic origin. For this reason she was tested with particular care.

We decided to give Jane food samples, some containing an edible petrochemical she claimed she was unable to tolerate, namely, mineral oil. Two batches of mayonnaise were made identical in taste, texture, and other characteristics, but one contained mineral oil. Another physician divided the 2 specimens into 13 jars, coded them, and kept a record of this. Neither Jane nor I knew which samples contained the mineral oil until the end of the experiment. I gave the samples to Jane with instructions to take one at a time and note the effects of each coded sample. At the conclusion of the experiment we found she had correctly identified 11 of the 13 specimens. This is far better than we would expect from chance. We concluded that Jane's cerebral confusion, muscular incoordination, and respiratory complaints were real and not imaginary.

Case 4. Another patient, Mary, is a botanist and also an illustrator. Her detailed plant drawings and identification services have been used to classify all of the flora of one of our western states. She was working at a downtown building for the Department of Agriculture when she found that for several hours after driving to work she was not functioning well. Her chest hurt—an intense, deep-down burning throughout her lungs; her eyes burned; and, worse than these, she couldn't control her drawing hand. She couldn't focus either her eyes or her mind well enough to appreciate and to draw the detail needed to make a scientifically accurate drawing. Various solutions were tried, such as working at off-hours, which helped for a while but eventually wasn't enough. Finally she too lost her job.

Mary left her home and her aged mother and rented a room in a farmhouse about 100 miles away in Virginia. She promptly became sick every time she returned for a visit, but on the whole the move worked well until an intensive crop-spraying program was put into effect in her area. Most pesticides are dispensed in kerosene, another petrochemical solvent. These fumes made her so ill she came back to Washington. She has sought refuge in the mountains and in various country homes, but she cannot escape petrochemical air pollution. On her last trip to a home she had found comfortable in the past her old symptoms returned. She found that an insecticide had been applied to the screens to kill gnats. A similar experience occurred in a cabin in Shenandoah National Park.

Since becoming sensitive to auto fumes she has been almost unable to tolerate any kind of oil, gasoline, or kerosene fumes. Where can she go to find enough clean air to breathe so she can work again? Mary has been

tested under laboratory conditions similar to those applied to Jane. She also performs with a high level of objective reliability.

The last 2 cases are examples of the primary effect of air pollution on the central nervous system and secondarily on the respiratory system. Such patients as these are not rare. I see from 10 to 12 people with petrochemical intolerance in every 100 new patients. Some are so desperate that they are trying to start a living and working community in a smog-free area, the Rocky Mountains. There are groups of patients banded together for this and for other mutually supportive purposes in Denver, in Chicago, and here in Washington.

We might ask what does the average person go through? Is he aware of a problem in the air in this city? To find out we conducted a survey last August when the air-pollution levels were not particularly high. We distributed questionnaires to 89 persons picked at random from the D. C. telephone book. Questionnaires were also distributed at random to other groups. We asked each person whether he thought that air pollution irritated his eyes. We asked if there was a known nasal allergy. From the 173 replies we learned that 60 per cent of our total group attributed eye discomfort to air pollution under at least some circumstances in the past year. Of the persons who believed they had nasal allergy (1 in 5), 80 per cent complained of air-pollution irritation.

Although physicians are not worried about long-term ill-effects of air pollution on the eyes, the effect of the same irritants in the bronchial tree, in swallowed saliva, or in the urinary bladder is another story. Cancer of these organs is much higher in densely populated areas compared to less polluted areas, and Washington, D. C. was one of the densely populated areas specifically studied. I have not even touched on such long-term effects of air pollution. Our city, in common with all of the large metropolitan areas, is in a bad condition. It is going to get worse. Even if we take action today there will be a time lag before anything can be done. Meanwhile our population grows and with it the airborne wastes of all of our uses of energy. In the interests of public health we must apply our already available technology at a much faster rate than is presently contemplated. The situation is urgent now. Delay in application of our present regulations governing exhaust equipment on cars and the phasing-out of crude heating oils is literally sickening.

Studies with Flurandrenolone Tape

RUSSELL J. FIELDS, M.D.,* AND RODOLFO MAGPANTAY, M.D.†

THIS REPORT is presented to suggest the further use of a new modality for the application of topical steroids. In this study a steroid flurandrenolone has been incorporated into Blenderm Surgical Tape.‡ It is supplied with a paper backing that is easily removed, and a size suitable for the lesion to be treated is readily shaped and applied. At present the tape has been available for clinical evaluation only. The tape used in the study contained 4 meg. of flurandrenolone to the square cm. The rolls used were 7.5 cm. wide and 200 cm. in length.

The tape was used mostly in chronic conditions in which occlusion would in no way enhance any underlying infections. In most cases it was applied once a day and left overnight. In other cases it was used for a full 24 hours.

The ease of application, plus the cosmetic compatibility, was a great feature in acceptance by patients. Almost without exception, it was preferred to the use of a steroid cream alone or to a cream covered with Saran Wrap.[®] It cannot readily be used in hairy areas. It did not appear to be as heating to the skin as the use of a cream plus an occlusive dressing.

Another feature of the use of the steroid tape was that an exact dosage could be obtained, although we found this not to be of too great importance since large amounts of tape were rarely used and unusually large areas seldom treated for any great length of time. The tape likewise has a mechanical protective quality and is especially useful on hard-to-bandage areas, i.e., fingers, dorsum of the hands, elbows, and flexor surfaces of the foot. The tape should be applied smoothly and firmly to clean, relatively dry areas. We did not use it in areas where other bandaging was necessary.

In our series we experienced no reactions of consequence except a mild erythema in 2 cases. The patients were usually enthusiastic about

this type of modality and the results obtained. It was not used in pregnant patients.

In our series we did not do control studies with plain tape and the steroid tape. We did, however, compare areas treated with and without the steroid tape. Almost all patients had a better result when the steroid tape was applied than in cases in which no therapy or other modality was used. All of our patients were ambulatory.

Although the greatest number of our patients had psoriasis, it was found that the tape was useful in a variety of conditions, such as chronic eczema, especially of the lower extremities, neurodermite, lichen planus, necrobiosis lipoidica, and some cases of discoid lupus erythematosus. ■

Like all topical steroids, Cordan Tape is contraindicated in tuberculosis and certain viral infections such as herpes simplex, vaccinia and chickenpox.

In our series of 56 cases of various dermatoses the overall results indicate that we have in flurandrenolone tape a superior modality for the application of steroids to the skin (table 1). To our knowledge only 2 previous studies have been made.^{1, 2}

TABLE 1: Effectiveness of Steroid Tape by Diagnosis

Diagnosis	Total	Excellent	Good	Partial Improvement	No Improvement	Worse
Contact dermatitis.....	6	2	3	1		
Radiodermatitis...	1		1			
Necrobiosis.....	3	3				
Neurodermite.....	5		4	1		
Nummular eczema...	3	2	1			
Chronic eczema....	12	3	4	4	1	
Alopecia areata...	3				3	
Psoriasis...	19	4	15			
Pustular psoriasis..	3		1	1	1	
Seborrheic eczema	1	1				
TOTAL CASES.....	56	15	29	7	5	0

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* Chief, Division of Dermatology, Department of Medicine, Doctors Hospital, Washington, D. C.; office: 1835 Eye Street, N.W., Washington, D. C. 20006.

† Resident in Medicine, Doctors Hospital, Washington, D. C. 20006.

‡ Supplied as Cordran Tape by E. L. Jones, M.D., of Eli Lilly and Company, Indianapolis, Indiana.

On the Importance of a Research Experience during the Clinical Residency*

COLONEL STEWART L. BAKER, MC, USA†

IMPROVEMENT in the physician's ability to evaluate scientific information is a major goal of residency training programs. Acquisition of factual information has measurably lesser value than efficiency in critical thinking and in problem-solving.¹

Medicine is in the process of a revolutionary expansion of knowledge in the biological sciences,² with the amount of relevant information, in bits and chunks, increasing at an exponential rate. The concept of disease is becoming multidefinitonal, with a consideration of models which range from the molecular to the social. Additionally, concepts of etiology are more complex, and a principle of multiple causality is often proposed. The potentials of computer and allied technologies for rapidly sorting and organizing huge quantities of medical data to assist in the organization and delivery of health services are being demonstrated.

These values are easily measured in general hospitals and clinical centers where most residents train. Improved communications media, from closed-circuit TV to computer-facilitated data-retrieval techniques and rapid copy services, all tend to bring the resident forward in time, closer to the very latest and best yield from research programs. It was said some years ago that scientific research functioned 50 years ahead of application or services. Now the communications gap is considerably shorter, sometimes no longer than the deadline of a periodical. Such intimacy between the bench and the bed tends to increase the resident's readiness for personal involvement in research activities.

A recent limited sampling of training programs revealed approximately one-half of the programs "expected" the resident to complete work on a research problem prior to successful completion of training. Our department has for the past 4 years held to the firm requirement that each resident will

develop a research proposal before the end of the second year of residency and will report on the collected data before the end of the third year. When initially proposed, the requirement met with much question from staff as well as residents. With each successive year the overall response to the expectation of research experience has been more positive. A program of specialized support for this aspect of the residency training has grown each year as well. The current procedure directs the resident to a research advisor during the second half of the first year who provides general consultation and assists him in applying for research funds when indicated. Technical and experienced research facilities are readily available at the Walter Reed Institute of Research. A Departmental Research Committee meets monthly to consider and evaluate the research proposals and to review progress. In early June of each year the senior or third-year residents present their research papers at an all-day forum, with primary discussion of the papers supplied by visiting consultants. Experience with this format has been encouraging. There is a sense of the productivity of the research, since the projects often measure and refine local procedures and treatment values.

There are a number of rewards immediately realizable from such a training requirement:

1. Through the rigor of organizing and reporting out his research data, the resident sharpens his critical thinking and increases in ability to judge the tightness of design and inferences developed in the medical writings of others. After completing residency training many physicians practice medicine well outside the shadow of the teaching hospital and have an increased dependence on professional periodicals and similar medical reports for continued education.

2. It is often said that far more is taught than is learned. Learning is an active process. The teaching environment must not only promote the development of an apprenticeship model for learning but must also support or permit independent activities by the resident as he learns. The research project seems uniquely capable of nurturing both values.³⁻⁷

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† Chief, Department of Psychiatry and Neurology, Walter Reed General Hospital, Washington, D. C. 20012.

3. The resident is trained so as to be able to interpret the medical research scientist and his work to the community. Through training in research design and methodology one has the opportunity to develop practitioners who will be interested in medical program development and evaluation. Health services must be continually subjected to a process of redevelopment and re-evaluation by seeking new applications. Some of the residents will direct such programs in the future.⁸

4. Experience and mastery in planning, completing, and reporting out research findings provide an important practice in preparation and presentation of a medical paper. Several of the residents' papers have, with only modest revisions, been accepted for publication.

5. A number of residents in clinical specialties have unrecognized abilities and appetites for research careers. Experience with a research problem may identify such a talent and in other instances may resolve the question happily in the negative.

6. For some residents, engagement in a research problem will provide opportunity for a cross-discipline experience and serve to counteract the depersonalization of the organ-specialized physician.

One word of caution seems indicated. When research experience is required residents will communicate an expectation that staff will also be active in research since they are so forthright in commending it to the trainee. The staff must lead by example and by model in clinical research. There is an essential unity of medical research, medical education, and health care. In any event, the staff physician who does not condition and regulate his own value judgments through continuing personal research into the rapidly changing values and clinical parameters of health services is certainly programming his own obsolescence.

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Vistaril[®]

HYDROXYZINE PAMOATE

an antianxiety
agent that
serves
a human need...

"The danger involved in prescribing dependency producing medication for relief of anxiety lies in the fact that we do not know in advance the dependency proneness of the individual."¹

A woman who is undergoing the emotional stresses of the menopause may, for the first time, need an antianxiety agent. But she may also be susceptible to drug abuse.

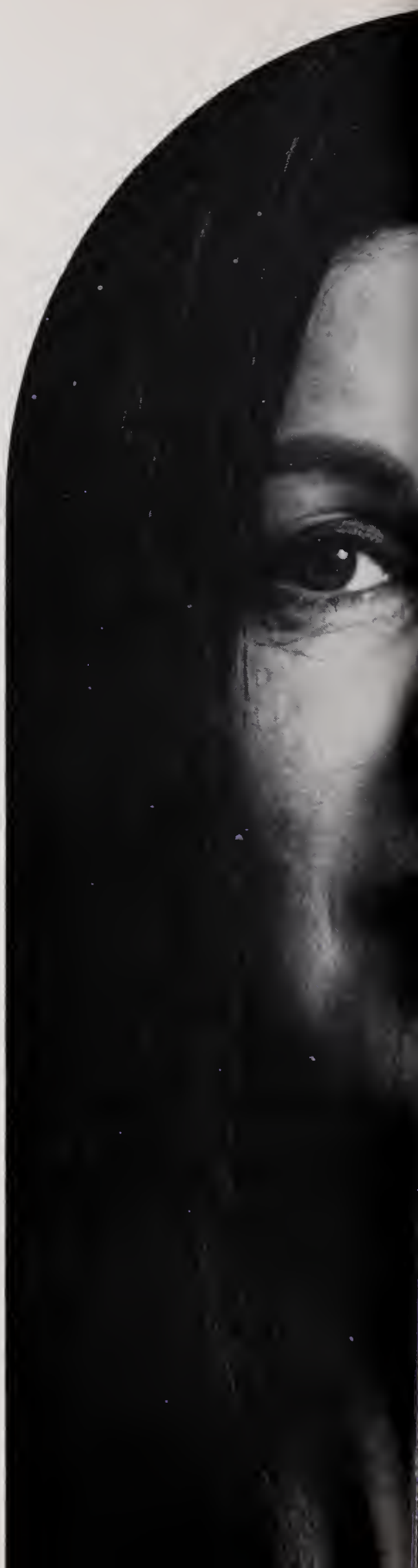
Vistaril can fulfill the need for tranquilization without creating a new need—dependency.

Vistaril calms anxiety and agitation quickly—usually begins to work in 15-30 minutes. And, in more than ten years of clinical use, after more than a billion doses to date, there have been no reported instances of dependency on hydroxyzine.

When the need for antianxiety medication is reduced or no longer exists, Vistaril dosage may be lowered or discontinued without ill effects.

Recommended starting dose, anxious menopausal patient, 50 mg. t.i.d.

With Vistaril, it is as easy to
stop therapy as it is to start.





without
creating
new one.

tion, for intramuscular or intravenous use, *must not* be injected subcutaneously or intra-arterially.

Hydroxyzine, when administered to the pregnant mouse, rat, and rabbit induced fetal abnormalities in the rat at doses substantially above the human therapeutic range. Clinical data in human beings are inadequate. Until adequate data are available to establish safety in early pregnancy, hydroxyzine is contraindicated during this period.

Precautions: Hydroxyzine may potentiate the action of central nervous system depressants such as narcotics and barbiturates. In conjunctive use, dosage for these drugs should be decreased as much as 50%. Because drowsiness may occur, patients should be cautioned against driving a car or operating dangerous machinery. The usual precautions for intramuscular injection should be followed; soft-tissue reactions have rarely been reported when proper technique has been used. Hydroxyzine parenteral solution for intramuscular use should be injected well within the body of a relatively large muscle. In adults, the preferred sites are the upper outer quadrant of the buttock (i.e., gluteus maximus), or the mid-lateral thigh. In children, preferably the mid-lateral muscle of the thigh. In infants and small children the upper outer quadrant of the gluteal region should only be used when necessary, as in burn patients, in order to minimize the possibility of damage to the sciatic nerve. The deltoid area should be used only if well developed, such as in certain adults and older children, and only with caution to avoid radial nerve injury. Injections should not be made in the lower and middle thirds of the upper arm. Aspiration should be done to help avoid intravascular injection. On reported intravenous injection a few instances of digital gangrene have occurred distal to the injection site, considered to be due to inadvertent intra-arterial injection or possibly periarterial extravasation. Therefore, particular caution (aspiration and site injection) should be observed to insure injection only into intact veins; avoid either intra-arterial injection or extravasation. Intravenous administration should be accomplished slowly, no faster than 25 mg. per minute, and not to exceed 100 mg. in any single dose. In order to avoid possible adverse effects it is recommended that hydroxyzine parenteral solution be diluted to at least 50 cc. with sterile normal saline and administered over a period of four minutes or more, preferably into the tubing of a running intravenous infusion.

The intravenous administration of this drug is not recommended for children under 12 years of age.

Adverse Reactions: Drowsiness may occur; if so, it is usually transitory and may disappear in a few days of continued therapy or upon dosage reduction. Dryness of the mouth may occur with higher doses. Involuntary motor activity, including rare instances of tremor and convulsions, has been reported, usually with higher than recommended dosage.

When this product is given intravenously undiluted, minimal amounts of intravascular hemolysis occur at the site of injection. Giving the maximum recommended intravenous dose (100 mg.) to adults results in immediate transient hemolysis with the liberation of a total of 2-3 grams of hemoglobin, which, in some individuals, can cause small amounts of hemoglobinuria. This compares with the normal red cell destruction from which approximately 8 Gm. of hemoglobin are liberated every 24 hours. If the hydroxyzine is diluted with 50 cc. of normal saline and given during a period of four minutes or more, this phenomenon does not occur.

Supply: Vistaril (hydroxyzine pamoate) Capsules: Equivalent to 25 mg., 50 mg., 100 mg. hydroxyzine HCl. Vistaril (hydroxyzine pamoate) Oral Suspension: Equivalent to 25 mg. hydroxyzine HCl per 5 cc. teaspoonful. Vistaril (hydroxyzine HCl) Parenteral Solution: 25 mg./cc.—10 cc. vial and 50 mg./cc.—2 cc. and 10 cc. vial; Isoject,[®] 25 and 50 mg. per cc., 1 cc. per unit.

More detailed professional information available on request.

References: 1. Greenhouse, H.R.: Medication and the Dependent Personality, Symposium of Non-Narcotic Drug Dependency and Addiction, The Amer. Psychiat. Assn., N.Y. County Dist. Branch, New York, N.Y., March 10, 1966.

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itching



discharge



of trichomonal vaginitis...

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For the most widespread form of vaginitis the most widely successful therapeutic agent, Flagyl, is clearly indicated.

In trichomonal vaginitis, most physicians have reported a cure-rate of 95 per cent or more with Flagyl when infected male partners are treated concurrently and when treatment is repeated for occasional refractory infections in women.

Among the few patients who do not respond to Flagyl are those who may not have taken the prescribed dosage and those who may have been reinfected.

This high rate of cure obtained with Flagyl is unparalleled. Only systemically active Flagyl reaches the hidden reservoirs of reinfection in male and female genitourinary tracts.

Indications: Flagyl is indicated only in the treatment of trichomoniasis in both the male and female.

Contraindications: Pregnancy; disease of the central nervous system; evidence or history of blood dyscrasia.

Precaution: Complete blood cell counts should be made before, during and after therapy, especially if a second course is necessary.

Side effects: Infrequent and minor side effects include nausea, metallic taste and furry tongue. Gastrointestinal disturbances, flushing and headache sometimes occur, especially with concomitant ingestion of alcohol. The taste of alcoholic beverages may be altered. Other effects, all reported in an incidence of less than 1 per cent, are diarrhea, dizziness, vaginal dryness and burning, dry mouth, rash, urticaria, gastritis, drowsiness, insomnia, pruritus, sore tongue, darkened urine, anorexia, vomiting, epigastric distress, dysuria, depression, vertigo, incoordination, ataxia, abdominal cramping, constipation, stomatitis, numbness or paresthesia of an extremity, joint pains, confusion, irritability, weakness, cystitis, pelvic pressure, dyspareunia, fever, polyuria, incontinence, decreased libido, nasal congestion, proctitis and pyuria. Elimination of trichomonads may aggravate candidiasis.

Dosage and Administration: In women: one 250-mg. oral tablet three times daily for ten days. A vaginal insert of 500 mg. is available for local therapy when desired. When used, one vaginal insert should be placed high in the vaginal vault each day for ten days; concurrently two oral tablets should be taken daily.

In men: When trichomonads are demonstrated, one 250-mg. oral tablet twice daily for ten days in conjunction with treatment of his female partner.

Dosage Forms: Oral tablets—250 mg.
Vaginal inserts—500 mg.

SEARLE

Research in the Service of Medicine



GALLSTONES HAVE BEEN FOUND IN 60% OF PATIENTS WHO WEIGH MORE THAN 300 POUNDS, 45% HAVE DIABETES, AND 15-TO-20% HAVE HIGH BLOOD PRESSURE.

SOURCE: DUNCAN, G.G.; SCIENCE NEWS LETTER, 83:403 (JUNE 29) 1963.

NAPOLÉON BONAPARTE

LOST THE BATTLE OF WATERLOO BECAUSE HE WAS TOO FAT!

ACCORDING TO THE NEW YORK TIMES OF APRIL 13, 1890, THE DEFEAT OCCURRED BECAUSE HE FAILED TO CHECK HIS INTELLIGENCE INFORMATION. "IT WAS A MATTER OF MERE INDOLENCE AND THIS INDOLENCE WAS CAUSED BY FAT."

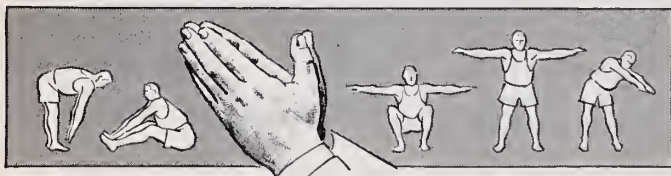
SOURCE: JAMA 186:65 (OCT. 5) 1963.



DIET DROP-OUTS

ACCORDING TO DRS. SHIPMAN AND PLESSET "APPARENTLY NO DIETER SUCCEEDS WHO IS VERY ANXIOUS OR DEPRESSED."* THE AMBAR FORMULA PROVIDES METHAMPHETAMINE TO HELP ELEVATE THE MOOD AND PHENOBARBITAL TO HELP REDUCE ANXIETY.

*SOURCE: ARCHIVES OF GENERAL PSYCHIATRY 8:26 (JUNE 1963).



THE BOOK "PRAY YOUR WEIGHT AWAY" URGES READERS TO "ASK GOD TO HELP YOU LIKE EXERCISE" FOR 15 MINUTES A DAY.

SOURCE: REV. C.W. SHEDD; NEW YORK, LIPPINCOTT, 1958.

CONTROL FOOD AND MOOD ALL DAY LONG WITH A SINGLE MORNING DOS

AMBAR #2 EXTENTABS

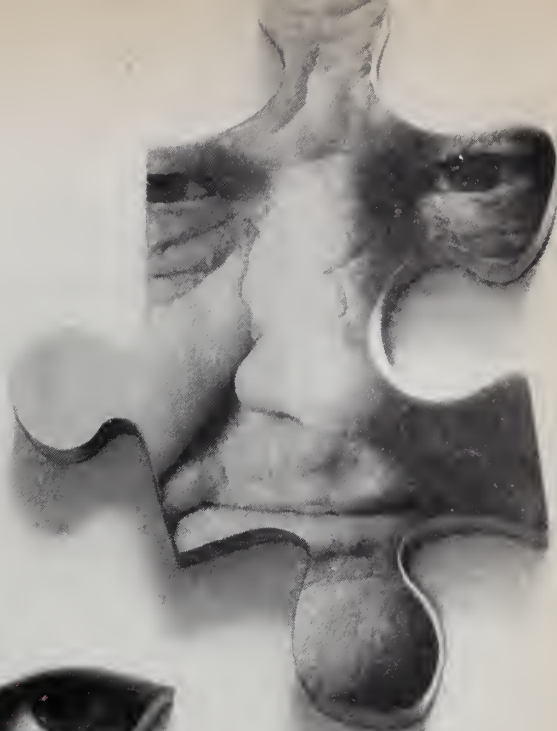
methamphetamine HCl 15 mg.,
phenobarbital 64.8 mg. (1 gr.)
(Warning: may be habit forming).

One Ambar Extentab before breakfast can help control most patients' appetite for up to 12 hours. Methamphetamine, the appetite suppressant, gently elevates mood and helps overcome dieting frustrations. Phenobarbital, the sedative in Ambar, controls irritability and anxiety...helps maintain a state of mental calm and equanimity. Both work together to ease the tensions that erode the willpower during periods of dieting. Also available: Ambar #1 Extentabs®—methamphetamine hydrochloride 10 mg., phenobarbital 64.8 mg. (1 gr.) (Warning: may be habit forming).

BRIEF SUMMARY/Indications: Ambar suppresses appetite and helps offset emotional reactions to dieting. **Contraindications:** Hypersensitivity to barbiturates; sympathomimetics; patients with advanced renal or hepatic disease. **Precautions:** Administer with caution in the presence of cardiovascular disease or hypertension. **Side Effects:** Nervousness or excitement occasionally noted but usually infrequent at recommended dosages. Slight drowsiness has been reported rarely. See package insert for full details.

A. H. ROBINS COMPANY, RICHMOND, VA. 23220 **A-H-ROBIN**

a puzzle of antacid complaints



"Will this one
taste O.K.?"



Will it help "my
gassy stomach?"

"Will it stop the pain?"

Mylanta[®]

aluminum and magnesium hydroxide *plus* simethicone

a solution to peptic ulcer distress

Effective neutralization—

with the two most widely prescribed antacids:
aluminum and magnesium hydroxides.

Concomitant relief of G.I. gas distress—

with the proven¹ defoaming action of simethicone.

Prolonged acceptance confirmed—

in 87.5% of 104 patients after a total of 20,459
documented days of therapy.²

Composition: Each Mylanta chewable tablet or teaspoonful (5 ml.) contains: magnesium hydroxide, 200 mg.; aluminum hydroxide, dried gel, 200 mg.; simethicone, 20 mg.
Dosage: One or two tablets (well chewed or allowed to dissolve in the mouth) or one or two teaspoonfuls to be taken between meals and at bedtime.

References: 1. Hoon, J. R.: Arch. Surg. 93:467 (Sept.) 1966.
2. Danhof, I. E., Personal communication.

Stuart

Division/Pasadena, Calif.
ATLAS CHEMICAL INDUSTRIES, INC.

When the agitated geriatric disrupts the home...

His daughter
can't please him.
There is "just
no living with him."

His disturbances
at the table
make every meal
a nightmare.

His teen-age
granddaughter won't
invite friends home
because of his outbursts.

His slovenly
room and habits
create more
tension.



In moderate to severe anxiety...

- Mellaril helps control the most frequent symptoms: marked tension, agitation, apprehension, restlessness, hypermotility
- Mellaril often alleviates anxiety-induced somatic complaints
- Mellaril frequently helps strengthen emotional resources
- Mellaril helps the patient maintain realistic contact with environment, closer harmony with family

Contraindications: Severely depressed or comatose states from any cause, and in association with or following MAO inhibitors; severe hypertensive or hypotensive heart disease.

Precautions: Hypersensitivity reactions (e.g., leukopenia, agranulocytosis) and convulsive seizures are infrequent. Pigmentary retinopathy has been observed where doses in excess of those recommended were used for long periods of

time. May potentiate central nervous system depressants, atropine, and phosphorus insecticides. Where complete mental alertness is required, administer the drug cautiously and increase dosage gradually. In addition, orthostatic hypotension (especially in female patients) has been observed.

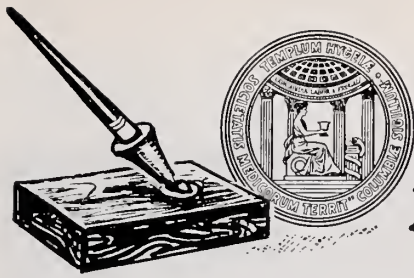
Epinephrine should be avoided in treatment of drug-induced hypotension.

Side Effects: Pseudoparkinsonism and other extrapyramidal disorders are infrequent; drowsiness, especially in high doses early in treatment, may occur; nocturnal confusion, dryness of the mouth, nasal stuffiness, headache, peripheral edema, lactation, galactorrhea and inhibition of ejaculation are noted on occasion; photosensitivity and other allergic skin reactions may occur but are extremely rare.

for moderate to severe anxiety
Mellaril®
(thioridazine)
25 mg. t.i.d.



Before prescribing, see package insert for full product information.



President's Page

THE TRUE MEASURE OF A MAN



"A TREE IS BEST MEASURED when it is down." So it is also with a man's life. Only in the perspective of time can the balance between the problems, conflicts, successes and failures of one's work be judged. And so it was with George Cooley.

Each of us is so absorbed in the day-by-day stresses of our own medical practices that we rarely have an opportunity to see the volume of correspondence or to appreciate the number of minute details with which the Executive Director of our Medical Society must contend each day. The result of his efforts at sorting facts and data and presenting them in their proper perspective is evident in board and committee meetings, but the work behind the scenes can only be comprehended through close observation. George's own concept of doing a job was well expressed when he wrote: "Contrary to the belief of many people, it seems to me that the man makes the job, not the job the man," and "I live my work rather than work at it."

My first meeting with George, after becoming President of the Society, was a rather stormy one. We disagreed completely in our ideas about several subjects. We finally laughed, and George said, "You know, you and I are going to get along very well. I'll always tell you what I think and you can do whatever you like about it." With this understanding, our course was entirely smooth until his untimely death.

Few members of our Society realize how much he was concerned with the individual welfare of each of us. He worried frequently about law suits, insurance benefits, the Ruffin Fund recipients, and increasing governmental control over medical practice.

He will be sorely missed.

William S. McLane



GEORGE WILES COOLEY

**Secretary-Treasurer, The Medical Society of the District of Columbia
and Managing Editor of the Medical Annals
1962-1968**



George Cooley—The Kind of Man He Was*

I DO NOT NEED TO TELL YOU that George Cooley was an unusual and dedicated friend and a tireless executive of this Society, and in the few moments that are mine I'd like to pay tribute to him for the kind of a man he was, the life that he lived, and the faith that showed forth in his daily doings.

George lived in the present. He lived each day as it came, profoundly grateful for the gift of that day. I can imagine that many times he said with the psalmist, "This is the day which the Lord has made. I will rejoice and be glad in it." For, you see, from very early childhood George lived under the shadow of a heart disease. His family was told that it would be unusual if he lived through adolescence. Then again, through the early years of adult life, never knowing just when the last day would come, rather than retiring to a life of illness and bitterness, wanting others to care for him, he invested himself completely, living each day to the fullest, triumphing over personal difficulties that very few persons ever knew about. The poet Lydia Ward has expressed, I think, the philosophy that marked George's life.

Why fear tomorrow, timid heart,
Why dread the future's way?
We only need to do our part
Today, dear child, today.
The past is written. Close the book
On pages sad and gay.
Within the future do not look
But live today—today.
'Tis this one hour that God has given
His NOW we must obey
And it will make our earth his heaven
To live today—today.

*EDITOR'S NOTE: These remarks, both thought-provoking and consoling, were made by Dr. Hathorne at a simple and beautiful memorial service for Mr. Cooley in the Medical Society's Exhibit Hall on Sunday afternoon, February 18. At this service Dr. Nicklas gave the brief eulogy which follows in this issue, and Dr. John L. Marlow, an operatic baritone and a member of the Society, sang two solos, "Jesu, Joy of Man's Desiring," by Bach, and "The Lord's Prayer," by Mallotte.

Almost every morning George read a selection that he had typed and kept on his desk at home called "A Morning Resolve":

"I will try this day to live a simple, sincere and serene life, repelling promptly every thought of discontent, anxiety, discouragement, impurity, self-seeking; cultivating cheerfulness, magnanimity, charity, and the habit of holy silence; exercising economy in expenditure, generosity in giving, carefulness in conversation, diligence in appointed service, fidelity to every trust, and a childlike faith in God.

"In particular, I will try to be faithful in those habits of prayer, work, study, physical exercise, eating and sleep which I believe the Holy Spirit has shown me to be right."

How faithfully George lived by this morning resolve those of you who were privileged to work with him, to live with him, surely know.

The second quality of George's life was that he lived for others. This was the compelling force of his life—a commitment, a personal dedication, and yet a deep humility—as he gave himself unselfishly for the service of mankind. His was truly a life of service. His wife told me yesterday that he greatly respected the physician and the selfless service that so many in this calling perform. And yet George himself had a full measure of that quality as he gave himself unstintingly in unselfish service for others. Dr. William C. Menninger, in one of his writings, calls this quality a mark of maturity. "Another important measure of maturity," he writes, "is the capacity to find more satisfaction in giving than in receiving. We start out as infants with everything coming our way. Many of us would like to continue playing that nice, happy, blissful role all of our lives, and an amazing number of us try to do just this. But to grow up, the role must be reversed: Instead of being on the receiving end the mature person is on the giving end of the line. None of us ever give up all our pleasure in receiving—we like to receive, and we should—but I hope we go far beyond that to find our greatest satisfaction in giving of ourselves to our children, to our communities, and to the social

needs of this shrinking world in which we live. The most mature person follows the adage of losing one's life to find it. . . ."

George lived for others in everything he did. He did not care who got the credit as long as the important work was accomplished. He took deep satisfaction in simply seeing it done. He never accepted the statement, "It can't be done." He liked a challenge and the opportunity to prove that the difficult could be done. His ability as an organizer and his talent as an enabler marked him as an outstanding leader in the full sense of the term.

Finally, George lived by faith, and he lived his faith! He had a deep and abiding faith that had its roots in his childhood and family relationships. A member of the Congregational Church, he was in earlier years a leader in youth work. He read from his Bible before retiring almost every night of his life. But his faith was not mere words, but deeds. He lived it every day. He took seriously the words of Jesus, "By their fruits you shall know them," and sought to put his faith into daily practice. In addition to the daily resolve which George read

nearly every morning he also read almost daily the following prayer:

"O God, give me strength to live another day. Let me not turn coward before its difficulties or prove recreant to its duties. Let me not lose faith in my fellow men. Keep me sweet and sound in heart, in spite of ingratitude, treachery, or meanness. Preserve me from minding little stings or giving them. Help me to keep my heart clean and to live so honestly and fearlessly that no outward failure can dishearten me or take away the joy of conscious integrity. Open wide the eyes of my soul that I may see good in all things. Grant me this day some new vision of thy truth, inspire me with the spirit of joy and gladness, and make me the cup of strength to suffering souls; in the name of the strong Deliverer, our only Lord and Saviour, Jesus Christ."

I submit that no man could live with this as his creed without being a deeply spiritual individual.

THE REV. BERKLEY C. HATHORNE, TH.D.
*Director of Pastoral Counseling, Baltimore
Conference of The Methodist Church*

A Tribute to George Cooley from the Executive Board*

SOMEONE SAID OF GEORGE: "He was a *thinker* and a *doer*." His brilliant and incisive mind was always full of plans for the present and future activities of this Medical Society. He set no limits to the time and effort he would spend when he thought our profession and the community, equally, could benefit. And now we have learned he was not well in recent months. How much his labors for us must have taxed him!

Before assuming the responsibilities and problems of his position here with us he had already distinguished himself nationally. He was Executive Secretary of the Academy of Medicine of Toledo and Lucas County (Ohio) before he went with the American Medical Association as Secretary to the Council on Medical Service. There he became known as a pioneer in developing plans for prepaid health insurance and laid the groundwork for acceptance of this concept of health care, at a much later date, by that body. It is significant that his good friend and predecessor here, Ted Wiprud, shares honors in this pioneer movement. George's knowledge in this field was encyclopedic and his many contributions were invaluable. As an

example, the Homemakers' Program, now established over the entire country, was his "brain-child."

He reorganized and revitalized our Medical Society, and increased its stature and prestige nationally and in our own community.

During the time I served as your President-elect and President I was particularly impressed by his unusual talents for planning and organization and by his genius in the financial management of our affairs.

During the planning and construction of this building it was Dr. Paul Wilner more than any of us who shared with George the great responsibilities inherent in such a project. Dr. Wilner can give eloquent testimony to the untiring efforts and long hours spent by George at that time, and also to his brilliant and constructive ideas and to his attention to every minute detail.

Still to be mentioned are the esteem, affection and admiration of those who worked intimately with him. They found him warm and sympathetic and understanding, yet modest and frequently self-effacing and shy. Many of our members will long remember, and be grateful, for his wise counseling, not only in their professional problems but often in their personal ones.

*Read at the memorial service for Mr. Cooley on Sunday afternoon, February 18, 1968, in the Medical Society's building in Washington, D. C.

It has been said that the true character of a man cannot be measured so well by those occupying higher positions than he but much more so by those who work for and under him. The devotion, respect and love shown George Cooley by the staff of this Medical Society are eloquent proof of this fact. In their grief over his death they are still inconsolable.

The Medical Society of the District of Columbia has suffered an irreparable loss. He will never be re-

placed in our hearts nor in the thoughts of all those members who knew and admired him.

Our beautiful Medical Society building—the fruition of his wise planning and arduous labor, and so dear to his own heart—as long as it stands will be his own special monument.

EDWARD W. NICKLAS, M.D.
*Chairman, Executive Board,
The Medical Society of the
District of Columbia*

George Wiles Cooley

His Life and Contributions to Medicine

WHAT PRODUCES a man of George Cooley's stature? Is it a combination of heredity, environment, education, and opportunity? What roles do personal ambition and adversity, perhaps, play? Why did this man, who might have chosen any one of a number of fields in which to succeed, choose to devote his life to humanitarian objectives? Here is the story of his life as it has been reconstructed through the help of his family, associates, co-workers and friends. He himself left as a résumé of his life a short outline consisting of 9 cryptic phrases including one date (not the year he was born). Mr. Cooley was a complex personality; our readers can try, if they like, to discover what motivated this man, who found wealth both alluring and admirable, to pursue a career which was so much less remunerative than he might have selected.

The Cooley Migration

The branch of the Cooley family in which we are interested came from England about the time of Lord Baltimore and settled in Harford County, Maryland, not far from Havre de Grace. The official family records were destroyed at the time the Capitol was burned in Baltimore. His great-grandfather, John Cooley, served in the Revolutionary War. His grandfather was born in 1790 while George Washington was President. This may sound unbelievable, but his grandfather was aged 50 before he married (his wife was 25); there were 9 boys in the family. His father, George Washington Cooley, born February 22, 1856, was the youngest of the 9, and he did not marry until he was 40 years old. The beautiful home they grew up in was on a slave plantation located about 5 miles from Havre de Grace; the house is still standing and occupied. After the slaves were freed

they stayed on and were taken care of as part of the family.

The oldest of these boys became a doctor and several of the others lawyers. Many of the Cooley family were teachers, and some still are.

George Washington Cooley, the youngest son, was only 10 when his father died, and an older brother took over the plantation. His mother and some of the brothers lived there until he was 20, but there were no funds left for a higher education for him.

The South, as is well known, was very poor after the War, and with the Dakota Territory opening up in the late 1860's and 70's, many from the South migrated there, including some Cooleys. His father went out there in the early 1880's. With the coming of the railroads and the Government offering Civil Service jobs, he took the examination and became a railway postal clerk, with an assignment between Sioux City, Iowa and Mitchell, South Dakota. He moved to Mitchell where he met and married Daisie DeLaney Angell, who was teaching in Mitchell.

George Cooley's mother, born January 1, 1865, of French and English lineage, had a very hard but eventful life. She, with a sister and 2 brothers, were left orphans in Chicago when his mother was 8 years old. The 2 girls were adopted by a family with the name of Angell. Separated from their brothers, they were reunited many years later.

The Angell family moved to Omaha, Neb., when his mother was 15 and from there to Mitchell, about 1883. A store Mr. Angell bought was later traded for a farm 5 miles from Mitchell, where Daisie learned a lot about hard work and trying times.

The pioneer days in the Dakotas were very difficult, with severe snowstorm-blizzards, extremely cold weather in the winters, and very hot

summers. His mother's tales of fighting prairie fires, coping with snow storms (not being able to get to town, the family burned twisted hay to keep warm and ground wheat in a coffee mill), as well as many other hardships match any of the pioneer stories that have been written. Two of the outstanding dates in the Middle West are the Chicago Fire of 1871 and the Dakota Blizzard of 1888—his mother experienced both of them.

Both his parents were very kind and considerate of others, constantly helping someone. There was hardly a time when there was not a guest in the home. There was never much money but always enough to eat and a spare room for someone. Any extra money was put into property. Two houses besides the home were all the property the family had when the father died. At that time Government pensions did not extend to the widows.

The Making of a Man

For the Cooley family the first problem with George, who was born April 11, 1911, was to keep him alive, for the doctor did not think he would live—he was so small and frail. His mother had a hard time finding food that agreed with him and finally resorted to strained foods (such as are now marketed for babies) by putting vegetables through a sieve. These, along with a formula which she located, satisfied him and he began to grow.

He was a bright child and, with the help of 4

older sisters, learned to talk early. By the time he was 2 or so he had memorized many nursery rhymes and was constantly reciting them. His family did not know about his heart problem until his preschool examination.

This boy, who was later to head a Crime Commission, had many fears as a child, especially lightning and thunder storms, which were very frightening in the Dakotas. He was small for his age and not too strong, but after his father died, when he was 13 years old, he started a paper route. It was at the edge of town where the houses were far apart. One stormy night the route seemed very ominous to him; sensing it, his mother said she really should learn something about his route, just in case he became sick and she would have to help out, so she went with him. He recalled this incident many times later—it helped him over one of his early fears.

During his junior high school days he had several attacks of such severe pain that he could not function rationally, which his doctor attributed to his heart. A new, younger doctor taught George how to recognize the symptoms of these attacks and how to handle them so the pain would not be so violent. Thus he learned early about his heart problem and how to live with it. During his senior high school years he had very few, if any, of these attacks.

In high school George was a good student but not interested in just working for grades; he preferred to take part in many activities. Conse-



GEORGE COOLEY, the "baby brother," with his parents and 4 sisters (left to right): Laurel, Harriett, Marion and Eloise.

quently, his name was on the honor roll, in a class of about a hundred, and also attached to a long list of achievements. During his school years he also participated in the activities of the Congregational Church in Mitchell and was a leader in its youth group.

In the Depression Years further education became quite a problem; the family knew he had to have more education because of his ability and because his heart condition would require mental rather than physical work. Also, having been reared in a home full of women, he very much needed to break away.

His sisters carried much of the household expenses after their father's death. There was not much in the way of cash reserves, but the 3 clear pieces of real estate could always help when a need arose. However, George insisted that if he went to college no indebtedness should be incurred. Therefore, he worked a year in a drug store in order to accumulate some money for the beginning year. After much consideration the University of Cincinnati was decided upon because it offered an opportunity for those enrolled in engineering to work part time and to go to school part time.

George wanted to study political science or law, but without extra financial backing the family believed those fields were a little uncertain, especially in the 1930's. He enrolled for engineering, but after three-quarters of a year realized that it just was not his field. He came home for the spring semester, after having discussed the problem with some of his professors, and received consent to switch courses.

George had 2 very hard decisions that freshman year. Almost immediately upon his arrival he had the required physical examination. The doctor, recognizing an unusual heart condition, called in a large group of nurses to listen to it, and then told the young man that he probably wouldn't live past 28, if he lived that long. With that shattering news, George did not think a college education was worth all the sacrifice he and his family would have to make. It took a lot of letters, but he was encouraged to give it a try—doctors were not always right! In addition, having to change courses and really start over took a lot of courage.

The family planned one year at a time, never knowing for sure there would be enough money for another year; but somehow the years went by and George received his A.B. degree in economics and political science in 1934. He earned a great deal of the money himself—most of his board and room. He did not have much social life but he did

get a good education and learned to become independent. In his senior year he was offered a scholarship for a special course in political science which was to be tried out in Cincinnati and a few other schools. He was one of two chosen from his school. During the two years of this course, leading to a Master's degree, he served as Executive Secretary of the Regional Crime Commission in Cincinnati. In 1937, as a consultant to the National Municipal League, he was assigned to Atlanta, Ga., where he participated in a comprehensive survey of the governments of Atlanta, including the administration of the Police and Fire Departments, and Fulton County. Most of the recommendations of this study were put into effect.



MR. AND MRS. COOLEY with their daughter, Lt. Marcia E. Cooley, physical therapist at the Maxwell Air Force Base Hospital in Montgomery, Ala. Mrs. Cooley is Executive Director of the Washington Heart Association.

Mr. Cooley married his college sweetheart, the former Mary Jane Metcalfe, of Greenville, South Carolina, in 1934, the year they both graduated. After his assignment in Atlanta ended, he joined his wife in Toledo. The position of Executive Secretary of the Academy of Medicine of Toledo and Lucas County, Ohio, had just become vacant; he applied and was accepted.

The Toledo Years

During the 7 years, 1938-1945, that Mr. Cooley served as Executive Secretary of the Academy of Medicine in Toledo he evidenced the interest in medical socioeconomics that he was to pursue in the years that followed. In 1944 he helped complete a city plan for offering medical insurance to industrial groups, utilizing the services of private insurance carriers. Through the Academy he worked with the Ohio State Medical Association

in devising a statewide surgical insurance plan. He was also active in helping establish an Enabling Act in the State of Ohio that would permit such a plan to operate.

Most of the years that he spent in Toledo were those of World War II. In order to lighten the load of the overworked physicians at that time he assumed administrative responsibilities that under ordinary circumstances would have been theirs. He constantly emphasized the need for better understanding on the part of the public of the role of the physician in the community. During his regime the Academy Service Bureau, an Academy-sponsored physician's answering service, arranged to take all night calls for the Toledo Health Department and to dispatch physicians to the homes of the indigent. He coordinated the work of the Executive Office so that for the first time there was close cooperation between the various civic and economic groups in the community and the Academy of Medicine.

In recognition of his excellent work at the Academy he was voted an Honorary member in 1950.

The AMA Years—1945–1962

In September 1945 Mr. Cooley was employed by the American Medical Association on a part-time basis to collect and prepare factual information on prepayment medical care plans. A few months later, as a full-time employee, he was named Assistant to Mr. Thomas A. Hendricks, Secretary of the AMA Council on Medical Service and Public Relations, at a time when "Council" referred not only to the group of physicians elected by the House of Delegates but also to the departmental staff at AMA Headquarters. In 1946 he was named Assistant Secretary of this Council.

Having worked at the county medical society level, Mr. Cooley had a keen interest in medical care programs which originated and were carried out at the local level, and in 1948 he initiated a series of biennial studies of county medical society activities. From these studies more detailed reports were made of emergency medical call plans and grievance committees and the first roster of executive secretaries and editors of medical society bulletins was compiled.

George was the principal AMA staff member in the socioeconomic field. He directed the large staff which served the Council on Medical Service and its committees and in that capacity made innumerable contributions to AMA's socioeconomic program. His knowledge of prepayment and health insurance was profound. He played a crucial role in

the history of Blue Shield and Blue Cross during the 1950's and was closely involved in every AMA project or program that had health economic impact.

For most of the committees established under the Council on Medical Service, he served as Secretary at one time or another. These committees dealt with such subjects as Hospitals and Medical Facilities, Medical Care for Industrial Workers, Indigent Care, Medical Care of Veterans, Prepayment Hospital and Medical Service, Relations with Lay-sponsored Voluntary Health Plans, Maternal and Child Care, and Aging.

After the Bureau of Information for returning servicemen was discontinued, the Physicians Placement Service was created. While the Service was under Mr. Cooley's direction conferences were sponsored and state associations organized placement programs, using the AMA as a central clearing-house.

Under the direction of a member of the Board of Trustees, Mr. Cooley provided staff liaison to the Joint Committee on Planning for the Chronically Ill of the AMA, American Hospital Association, American Public Health Association, and the American Public Welfare Association, which resulted in the creation of the Commission on Chronic Illness.

At various stages in his career Mr. Cooley was assigned to serve as secretary to committees of the Board of Trustees, such as the Committee on Voluntary Health Agencies, Committee on Medical Practices, Committee on Medical Rating of Physical Impairment, Committee on General Practice Prior to Specialization, and Committee to Review the Functions of the Joint Commission on Accreditation of Hospitals.

In December 1957 he was appointed Secretary of the Council on Medical Service. When the Headquarters staff was reorganized into divisions and departments he was named Director of the Department of Medical Service, a post he held until his resignation from the AMA in May 1962.

The Washington Years

Mr. Cooley took over the post of Executive Director and Secretary-Treasurer of the Medical Society of the District of Columbia on July 1, 1962, succeeding Mr. Theodore Wiprud who had served in that capacity since 1938. At the memorial service for Mr. Cooley, Dr. Nicklas, in his eulogy, which appears in this issue, gave a brief summary of his services to the Medical Society. His most lasting material contribution will be the

Medical Society's building for which he made the original design. In those drawings he demonstrated the fact that knowledge is seldom lost; the plans he drew were based on what he learned in his engineering studies that first year in college. This was also a good example of his amazingly retentive mind.

A restless spirit and a tired heart. On February 15, 1968, shortly after noon, on a busy corner in a busy city the uneasy partnership was reconciled—at a time and place symbolic of his own life.

Acknowledgment

THE EDITORIAL BOARD wishes to thank especially the following persons who supplied the information for this article: Miss Eloise Cooley, Madison, Wis.; Dr. W. W. Green, Toledo, Ohio; Dr. F. J. L. Blasingame, Dr. Ernest B. Howard, Dr. George F. Lull, Dr. Morris Fishbein, and Mrs. Alma J. Metzler, of Chicago; Dr. Austin Smith, Detroit; Dr. John F. Burton, Oklahoma City, Okla.; Dr. Willard A. Wright, Grand Forks, N. Dak.; and Mr. John Guy Miller, Washington, D. C.

Some Personal Appraisals of Mr. Cooley

AT MR. COOLEY'S DEATH numerous letters and telegrams from organizations and individuals were sent to Mrs. Cooley and to the Medical Society from all parts of the United States. The American Association of Medical Society Executives and the Medico-Chirurgical Society of the District of Columbia sent wires. There were letters from the Mayo Clinic and from the faculty of George Washington University School of Medicine. The California Medical Executives dedicated their February 24 meeting to him. The Washington Physicians Service of Seattle, Washington, sent out a special bulletin to its medical bureaus and

trustees throughout the state, informing them of his death.

The foregoing story of Mr. Cooley's life has been based on letters sent to the Editorial Board from his family and from those people who had worked with him or had been associated closely with him, especially during his years at the American Medical Association. Most of this story was taken verbatim from those letters. Many of the intimate, personal appraisals they contained have had to be omitted because of space limitations. However, the following excerpts are quite typical of all of them.

MR. COOLEY came to the American Medical Association in 1945 during a period of anxiety and stress over the rapidity with which new methods of medical practice were being introduced on the medical scene, with much debate over the quality of medical service that could be rendered and the effects on medical interpersonal and public relationships. His warm personality, his quiet demeanor, and his ability to adjust to many difficult situations made him among the most appreciated and most liked of all AMA employees. Although he suffered from a congenital malformation of the heart, he did not permit his disability to disturb others with whom he worked.

MORRIS FISHBEIN, M.D.

GEORGE possessed an excellent mind and a quiet personality. He had a good sense of humor, was a diligent worker, and wrote with exceptional ease even on complicated subjects.

He was a good organizer, and it was amazing to see him arrange and document agendas for many meetings and participate actively and becomingly in the discussions.

He knew he was ill, but he carried this burden with quietness and grace, giving freely of his talents and energies to his duties.

He will be missed and long remembered for the effective life he lived.

F. J. L. BLASINGAME, M.D.

GEORGE'S ABILITY to organize meetings on behalf of the AMA and its committees and councils was especially noteworthy in that he was able to draw together a diversity of viewpoints and experience that made the meetings productive. He exhibited this same balanced approach by the kinds of men he employed in his department. His impact here was profound, and his influence long-lasting.

ERNEST B. HOWARD, M.D.

GEORGE was a serious, hard worker who tackled a problem quietly but vigorously. Working with the Council and its committees he was painstaking as to detail, and when he prepared a report you could be sure of its completeness and accuracy. He was secretary of the Council at a time when the socioeconomic aspect of medicine was being attacked and he gave assistance in doing research and providing material to the Council.

GEORGE F. LULL, M.D.

MR. COOLEY usually embarked on new projects and received new ideas with enthusiasm which at times caused him to be branded as too liberal; however, in meetings with groups "outside the family" he defended AMA policies staunchly. He was often a persistent gadfly in small meeting groups, which did not endear him to members but

which usually did bring issues being considered into focus. What he may have lacked in diplomacy, he compensated for in his devotion to the AMA and its members.

ALMA J. METZLER

HE WAS A HARD WORKER, conscientious, and, because he had a rather quizzical and direct way of asking a question or responding to an argument, he could have been regarded now and then as occasionally having a chip on his shoulder. Actually he didn't; he was just direct. His directness reminded me a little of Old Ajax Carlson who, when he was told something, responded with, "Vere's de evidence?"

AUSTIN SMITH, M.D.

I'M SURE THAT EVERYONE who has served on the AMA Council on Medical Service or its numerous committees would agree that no one person had so much influence in developing the constructive activities in which it has been engaged than did George Cooley. From 1952 until George left the Council in 1962 I was closely associated with him in many Council activities. It always astonished me to find how many things George could keep under control and understand and correlate at any given time. As the interests of the Council developed ever-widening fields of activity, he was able, somehow, to keep track of the activities of each Council committee and of each member.

For those of us who collaborated with George during those years, life was not always easy. George had a deep and sincere pride in the profession of medicine. He had a burning zeal to present the interests of medicine in the best possible way. Not all of us could always live up to George's high standards, and I like to feel that his impatience with us reflected his desire that we should effectively represent an honorable profession.

My memory never seems to dwell on our occasional conflicts of opinion but rather on the genuine respect and admiration for him, developed in those of us who knew George for what he really was.

I can recall with great gratitude the many occasions when we found George a person we could turn to for the solution of a knotty problem. Often when we could not seem to get out of the morass of disorganized thinking and, even worse, disorganized expression of our thoughts, we would turn to him. He would calmly study the whole situation and usually come up with a solution.

I have often expressed, and wish to do so again, my admiration for the George Cooley who in so many instances provided interest, knowledge and stimulus for those of us struggling in this new and uncharted field of medical endeavor.

WILLARD A. WRIGHT, M.D.

GEORGE COOLEY was a man with vast and penetrating knowledge of the medical profession at national, state and local levels. No one surpassed him in his understanding of nonclinical problems of medical practice, particularly in their socioeconomic, institutional, and interprofessional aspects.

This mastery of his field was a product not only of a keen mind but of a spirit of dedication and a devotion to just plain hard work. Few speaking on behalf of medicine have been better received by the nonphysician world than George.

There are, of course, other sides to a man than his professional capacity, and so it was with George Cooley. He was a man of character. I admired his readiness to stand up for what he thought was right and respected his motivation to strive always for what was best for medicine. While he was at times demanding, he was always basically patient and kind to those with whom he worked. He was truly a gentle man.

JOHN GUY MILLER

GEORGE UNDERSTOOD THE MEMBERS of the medical profession as well as anyone I ever knew. He appreciated their proclivities to put off decisions and their inherent resistance to change, yet he never hesitated to bring up "ideas of change," and when he was convinced of the worthiness of the idea, he pursued it completely.

His method of promoting a new idea was unique. He would quietly bring up the matter involved at a small meeting, having previously informally discussed it with some of the members. After all present had had an opportunity to comment and discuss the subject, he would casually mention the possibility of obtaining a well-known personage or an acknowledged authority on the subject under discussion to come and talk to the committee at a later date. This would promptly be done, and before very long the idea, with resolutions of approval, would be presented to the Council on Medical Service or to the Board of Trustees.

He realized the importance of public meetings on controversial subjects and had uncanny abilities in preparing not only the agenda of the meetings but in selecting the proper persons for the presentation. He saw in these meetings the opportunities for not only informing the public of the AMA's thinking and its position on an issue but of educating the membership at large in accepting socioeconomic changes in the practice of medicine.

The American Medical Association and its various components have lost a brilliant, knowledgeable man who saw far ahead of his time and who endeavored constantly to impart his thoughts for the benefit of organized medicine. Members of its Committees, Councils, Board of Trustees, and Houses of Delegates who knew George and who had seen him in action will long remember a quiet, pipe-smoking, unassuming man who literally "worked his heart out for them."

JOHN F. BURTON, M.D.

Chemoprophylaxis for the Prevention of Tuberculosis

A Report of the Ad Hoc Committee on Chemoprophylaxis*†

ANTIMICROBIAL DRUGS, which have revolutionized the therapy of tuberculosis, can also be effectively used in chemoprophylaxis, the prevention of disease in the infected individual. Chemoprophylaxis presumably acts by diminishing the bacterial population in "healed" or invisible lesions of the person taking the drug. It is in reality treatment of infection and prevents clinical disease from developing or relapsing.

A substantial and growing body of scientific data testifies to the value of antituberculous drugs in prevention of clinical tuberculosis. The extensive trials conducted by the United States Public Health Service show a consistent reduction of morbidity in treated groups; it seems reasonable to expect that chemoprophylaxis can reduce future morbidity from tuberculosis in high risk groups by some 50 to 75 per cent. The extensive use of chemoprophylaxis now would likely reduce by 300,000 the total number of cases in the United States in the next 15 years.

Drugs Used in Chemoprophylaxis

A single drug, isoniazid, is generally used for chemoprophylaxis in a dosage of 300 mg. per day for adults and 10 mg. per kilogram body weight per day for children, not to exceed 300 mg. per day, to be administered in a single daily dose for a period of 12 months.

There are virtually no side-effects. The toxicity to this drug is low, apparent in only 0.2 to 0.4 per cent of those taking the drug, and it is easily reversible. Follow-up studies for periods of up to 15 years of groups of people who have been treated with isoniazid have revealed no evidence of long-term deleterious effects from its use. Isoniazid is also inexpensive.

Persons Recommended for Chemoprophylaxis

Every positive reactor is at some risk of developing active disease. Thus, any person found to have a reaction of 10 mm. or more to the Mantoux test, using 5 TU of PPD, should receive chemoprophylaxis whenever he is identified.

Since in the immediate future it is not practical to test and treat the entire population of positive reactors, priorities must be set for public health programs, taking into consideration the relative risk of developing active disease, the opportunities of infecting others, particularly children, and the resources available in the community. The total cost must also be taken into account.

For certain groups chemoprophylaxis is mandatory. These groups include certain inactive cases, certain special clinical situations, contacts, tuberculin converters and positive reactors among young children and adolescents.

Inactive tuberculosis. First priority for chemoprophylaxis should be given to persons with inactive tuberculosis. These include:

1. Ex-patients; persons who have had active tuberculosis and had no drug therapy or had inadequate drug therapy.
2. Persons with roentgenographic findings consistent with healed adult-type pulmonary tuberculosis and a positive tuberculin test. (Some persons over age 55 may react negatively to 5 TU of PPD, and a larger dose of tuberculin may be necessary to elicit a reaction.)

NOTE: It is essential to exclude active disease in these groups by bacteriologic examinations, comparison with previous radiologic findings, and other investigations because people with active disease require more intensive drug treatment.

The rate of reactivation among these inactive cases is between 0.5 per cent and 2.0 per cent a year. Many of these cases are known to health departments. It is a worthwhile program to review the records of inactive cases and recall them for assessment of the need for chemoprophylaxis. Such a program directed toward a well-delineated group would be more practical than surveying the whole community.

Special clinical situations. A person with a positive tuberculin test is in danger of activation or reactivation of tuberculosis in certain clinical

* Since the publication in February, 1965, of the statement by the American Thoracic Society Committee on Therapy entitled "Preventive Treatment in Tuberculosis," the indications for chemoprophylaxis have widened. The National Tuberculosis Association Committee for the Guidance of the Tuberculosis Program established an Ad Hoc Committee on Chemoprophylaxis with representation from the ATS Committee on Therapy, the ATS Committee on Respiratory Diseases in Children, the United States Public Health Service, and the NTA Committee for the Guidance of the Tuberculosis Program, which prepared this report.

† Reprinted from *The American Review of Respiratory Disease*, 1967 (September), 96, no. 3.

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situations. Such a person should receive chemoprophylaxis whether or not he has been treated with isoniazid before: (1) if he is placed on corticosteroid treatment; (2) if he undergoes gastrectomy; (3) if he has reticulo-endothelial disease such as leukemia or Hodgkin's disease; or (4) if he has a period of instability of severe diabetes. In the case of a pregnant woman who has inactive tuberculosis previously untreated with chemotherapy, or who has roentgenographic shadows consistent with inactive tuberculosis, chemoprophylaxis should be started in the last trimester and continued for a year.

When measles or whooping cough develop in children with a positive tuberculin reaction they should receive 8 weeks of chemoprophylaxis if they have been treated before; the course of chemoprophylaxis should be extended to 12 months if they have not received previous treatment.

Contacts. Contacts of recently discovered new active and reactivated cases of tuberculosis show a high incidence of this disease. Contacts should be examined and those diagnosed among the contacts as having tuberculosis should be reported and treated.

All household contacts of a reported active case of tuberculosis should receive chemoprophylaxis for 12 months if their reaction to the Mantoux test with 5 TU of PPD is 5 mm. or more of induration. In such instances, a 5 mm. reaction is most likely the result of exposure to tuberculosis and not a cross reaction due to infection with atypical mycobacteria. Those household contacts who show negative Mantoux tests should be retested every 3 months until at least 3 months have elapsed since the last exposure. If the skin test converts, chemoprophylaxis should be instituted.

An alternative approach is to give chemoprophylaxis to all household contacts, including those with negative tuberculin tests. Positive reactors remain on the drug for the full course. Negative reactors should be retested 3 months after last contact with the active case. If the contact has been assuredly broken and if they are still negative to tuberculin, chemoprophylaxis may be discontinued. When exposure may be continuous it is desirable to give chemoprophylaxis to tuberculin-negative contacts for as long as exposure continues. This may also be advisable in epidemics in closed groups and in situations in which it is impossible to retest the negative reactors at regular intervals.



CANCER SOCIETY KICK-OFF LUNCHEON: D. C. Mayor Walter E. Washington has just presented Dr. C. Roger Kurtz (right), President of the D. C. Division of the American Cancer Society, with the Proclamation designating April as Cancer Month in the District of Columbia. Between them is TV entertainer Lawrence Welk, the 1968 National Crusade Chairman. Members and guests at the luncheon, March 28, at the Shoreham Hotel, filled the Regency Room to capacity. Some 25,000 volunteer workers were recruited for the fundraising campaign in the Washington Metropolitan Area during the week of April 21.

Other positive reactors. In addition to the positive reactors just described, chemoprophylaxis should be given to the following reactors with normal chest films:

1. Converters: Known converters of all ages should receive chemoprophylaxis.
2. Certain positive reactors under age 20: Chemoprophylaxis is mandatory for positive reactors through the age of school entrance and for teenagers because of the relatively high risk attending tuberculous infection in these age groups.

Instituting the Chemoprophylaxis Program

Chemoprophylaxis can be instituted on a widespread basis through 2 major means.

1. The family physician, pediatrician or internist can institute chemoprophylaxis on an individual basis in patients who have a high risk of developing active tuberculosis.
2. Community agencies can work with the high risk groups that can be approached through a public health program. In many instances these persons are already known to health departments and their names are in the files of closed cases and in the reports from screening programs.

Motivation of Patient

With adequate motivation most patients will accept and stay on drugs for the full course. Enthusiasm and encouragement by the physician, nurse, and other health personnel involved are key factors. At the beginning of a course of prophylaxis the physician should take time with the patient to establish understanding and motivation. Subsequently there should be regular visits with the public health nurse, either in the clinic or at home, to reinforce the physician's teaching. Patients should be helped to develop their own systems of reminders to take drugs daily. In addition, maintaining the drug schedule should be made easier for patients by removing obstacles such as difficulties in getting to clinics for follow-up visits or in obtaining drug refills.

STEFAN GRZYBOWSKI, M.D. (ATS

Committee on Therapy), *Chairman*

MRS. SHIRLEY H. FEREBEE (U.S. Public Health Service)

ALFONSO H. HOLGUIN, M.D. (U.S. Public Health Service)

CAPTAIN DONALD C. KENT, MC, USN (ATS Committee on Therapy)

ROBERT G. LOUDON, M.B. (NTA Committee for the Guidance of the Tuberculosis Program)

J. A. PETER TURNER, M.D. (ATS Committee on Respiratory Diseases in Children)

EDWARD J. WELCH, M.D. (NTA Committee for the Guidance of the Tuberculosis Program)

► NEW MEMBERS

Active

JOE RANDLE CANTRELL, M.D. Office: 3711 Alton Place, N.W. Born in Amory, Miss. Medical degree: George Washington University, 1955. Specialty: Psychiatry.

ROY MELVIN COLEMAN, M.D. Office: 901-23rd Street, N.W. Born in New York City. Medical degree: University of Rochester, 1959. Specialty: Psychiatry.

WHEI-RUNG FU, M.D. Office: 901-23rd Street, N.W. Born in the Republic of China. Medical degree: National Taiwan University, 1958. Specialty: Radiology.

MAJOR PAUL GLADDEN, M.D. Office: 1822 Fourth Street, N.W. Born in Chester, S. C. Medical degree:

Howard University, 1962. Specialty: Orthopedic Surgery.

HARVEY ROBERT GOLD, M.D. Office: 2121 Pennsylvania Avenue, N.W. Born in Saratoga, N. Y. Medical degree: Syracuse University, 1960. Specialty: Pediatrics.

SALAH-EL-DIN HASSAN HOSNY, M.D. Office: 1236 Fifth Street, N.E. Born in Egypt. Medical degree: Cairo University, 1950. Specialty: Surgery.

KENNETH G. KASSEBAUM, M.D. Office: 5225 Connecticut Avenue, N.W. Born in El Dorado, Kansas. Medical degree: Northwestern University, 1960. Specialty: Pediatrics.

DAVID GEORGE LUTHRINGER, M.D. Office: 9000 Rockville Pike, Bethesda, Md. Born in Princeton, N. J. Medical degree: George Washington University, 1962. Specialty: Internal Medicine.

ROSS A. McELROY, JR., M.D. Office: 2141 K Street, N.W. Born in Nebraska City, Nebraska. Medical degree: University of Texas, 1961. Specialty: Psychiatry.

JOSEPH M. PISANI, M.D. Office: 1700 Pennsylvania Avenue, N.W. Born in New York City. Medical degree: New York University, 1942. Specialty: Administrative Medicine.

LEWIS P. SCOTT III, M.D. Office: 2125 13th Street, N.W. Born in Atlantic City, N. J. Medical degree: Jefferson Medical College, 1954. Specialty: Pediatrics.

WILLIAM FREDERICK THOMPSON, M.D. Office: 3611 Branch Avenue, Hillcrest Heights, Md. Born in Washington, D. C. Medical degree: George Washington University, 1961. Specialty: Pediatrics.

CLAUDE GILMORE WALKER, M.D. Office: 3103 Georgia Avenue, N.W. Born in Frederick, Md. Medical degree: Howard University, 1941. Specialty: General Practice.

Associate

CHARLES GEORGE BRATENAH, M.D. Office: 10100 Main Street, Fairfax, Va. Born in Cleveland, Ohio. Medical degree: University of Pennsylvania, 1943. Specialty: Pathology.

LEE P. HAACKER, M.D. Office: 4400 Stamp Road, Marlow Heights, Md. Medical degree: Jefferson Medical College, 1960. Specialty: Orthopedics.

THOMAS ANTHONY O'BOYLE, M.D. Office: 10401 Old Georgetown Road, Bethesda, Md. Born in Scranton, Pa. Medical degree: Georgetown University, 1960. Specialty: Pediatrics.

CLEMENTINE H. TIERNEY, M.D. Office: 300 Indiana Avenue, N.W. Born in Loretto, Minn. Medical degree: University of Minnesota, 1933. Specialty: General Practice.

R. VASANTHA KRISHNA, M.D. Office: Hudson River State Hospital, Poughkeepsie, N. Y. Born in Shimoga, India. Medical degree: Government Medical College of Mysore, India, 1960. Specialty: Psychiatry.

► HEALTH DEPARTMENT NOTES

Drug Addiction

DRUG ADDICTION has long been a major concern to private physicians, the D.C. Department of Public Health and law enforcement agencies in the District of Columbia. Until recently, however, little has been done in the way of rehabilitation and medical treatment to alleviate the problem.

According to the Bureau of Narcotics of the U.S. Treasury Department, of the major urban areas in the United States with a large number of known active narcotic addicts, the District of Columbia ranked fifth in 1965. The cost to the District during 1965 for care, custody and treatment of narcotic users was well over 1 million dollars.

Last December the D.C. Department of Public Health received funds totaling \$444,060 to establish an outpatient clinic and residential program for the treatment and rehabilitation of drug addicts. The program is funded through a grant received by the United Planning Organization (UPO) from the Office of Economic Opportunity. The UPO designated the D.C. Department of Public Health as contractor to carry out the program in the District.



DR. STEPHEN W. NEALON, JR. (second from left) receives a Certificate of Appreciation from the Georgetown University School of Medicine in appreciation of his 20 years' service as Editor of the *Georgetown Medical Bulletin*. The Reverend Mark H. Bauer, S. J., Vice President for Medical Affairs, made the presentation. Flanking Dr. Nealon are Dr. John C. Rose, Dean of the School of Medicine, and Mrs. Jane P. Snyder, Assistant Editor of the *Bulletin*.

Who Are the Drug Abusers?*

PATIENTS WHO TAKE DRUGS under a physician's orders can abuse them, intentionally or otherwise, by not following directions.

The majority of abusers, however, are persons who do not take drugs under medical supervision.

There is the unemployed young man with no prospects of a job who shoots heroin into his arm to forget his problems.

There is the housewife who takes tranquilizers, or drinks regularly, to dull the constant noise of her bickering children.

There is the truck driver who swallows pep pills to keep awake on an all-night run.

There is the college sophomore who turns his back on society with disgust, and picks up a sugar cube with LSD to take a trip away from the real world and to a "society" of his own making.

People of all ages, from all walks of life, and in all economic and social circumstances, abuse drugs. Interestingly enough, each of the 4 categories of the dependence-producing drugs tends to have its own type of abusers and its own physical and emotional consequences.

*From "The Crutch That Cripples: Drug Dependence," a publication of the Committee on Alcoholism and Drug Dependence, Council on Mental Health, American Medical Association.

A Drug Addiction and Rehabilitation Center has opened at 1825 13th Street, N.W. The Center will accommodate approximately 350 individuals a year. Two satellite halfway houses for men and women also are being established.

The goals of the program are to develop a comprehensive program where addicts may obtain medical, psychiatric and rehabilitative care. We hope the program will decrease illegal use of drugs in the District. Further, we will gather data on the scope and nature of the addiction problem; evaluate the use of selected treatment methods and refine those techniques which show promise; seek to educate the professional and lay public concerning narcotic addiction, its treatment, prevention and causes; compile data on available community resources and cooperate with them and seek their support to provide more effective services to the addict and the community.

The Center is open day and evening hours 7 days a week. It provides consultation, outpatient medical and psychiatric treatment, rehabilitation and referral services, recreational and research

Weariness "without cause"



*Psychic tension
with depressive
symptomatology?*

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She needs counsel and reassurance, and perhaps a tranquilizer to attenuate excessive tension and help restore the capacity to cope. As an aid to successful management, consider the value of Valium® (diazepam). As psychic tension is eased by Valium therapy,



secondary depressive symptoms too may subside. The patient feels more capable, therefore more hopeful; better able to handle situations of intense stress.

Before prescribing, please consult complete product information, a summary of which follows:

Indications: Tension and anxiety states; somatic complaints which are concomitants of emotional factors; psychoneurotic states manifested by tension, anxiety, apprehension, fatigue, depressive symptoms or agitation; acute agitation, tremor, delirium tremens and hallucinosis due to acute alcohol withdrawal; adjunctively in: skeletal muscle spasm due to reflex spasm to local pathology, spasticity caused by upper motor neuron disorders; athetosis, stiff-man syndrome, convulsive disorders (not for sole therapy).

Contraindications: Known hypersensitivity to drug; children under 6 months of age; acute narrow angle glaucoma; may be used in patients with open angle glaucoma who are receiving appropriate therapy.

Warnings: Not of value in treatment of psychotic patients, and should not be employed in lieu of appropriate treatment. As with most CNS-acting drugs, caution patients against hazardous occupations requiring complete mental alertness (e.g., operating machinery, driving). When used adjunctively in convulsive disorders, possibility of increase in frequency and/or severity of grand mal seizures may require increase in dosage of standard anticonvulsant medication; abrupt withdrawal in such cases may also be associated with temporary increase in frequency and/or severity of seizures. Advise patients against simultaneous ingestion of alcohol and other CNS depressants. Withdrawal symptoms (similar to those with barbiturates and alcohol) have occurred following abrupt discontinuance. Keep addiction-prone individuals (such as drug addicts or alcoholics) under careful surveillance because of their predisposition to habituation and dependence. Use of any drug in pregnancy, lactation or in women of childbearing age requires that potential benefit be weighed against possible hazard.

Precautions: If combined with other psychotropics or anti-convulsants, carefully consider individual pharmacologic effects—particularly with known compounds which may potentiate action of Valium, such as phenothiazines, narcotics, barbiturates, MAO inhibitors and other antidepressants. Employ usual precautions in the severely depressed or in those with latent depression; suicidal tendencies may be present and protective mea-

sures necessary. Observe usual precautions in impaired renal or hepatic function. Limit dosage to smallest effective amount in elderly and debilitated to preclude ataxia or oversedation (initially 2 to 2½ mg once or twice daily, increasing gradually as needed or tolerated).

Adverse Reactions: Side effects most commonly reported: drowsiness, fatigue and ataxia. Infrequently encountered: confusion, constipation, depression, diplopia, dysarthria, headache, hypotension, incontinence, jaundice, changes in libido, nausea, changes in salivation, skin rash, slurred speech, tremor, urinary retention, vertigo and blurred vision. Paradoxical reactions such as acute hyperexcited states, anxiety, hallucinations, increased muscle spasticity, insomnia, rage, sleep disturbances and stimulation have been reported; should these occur, use of the drug should be discontinued. Because of isolated reports of neutropenia and jaundice, periodic blood counts and liver function tests are advisable during long-term therapy. Minor changes in EEG patterns (low-voltage fast activity) observed during and after therapy and are of no known significance.

Dosage: Individualize for maximum beneficial effect. *Adults:* Tension, anxiety and psychoneurotic states, 2 to 10 mg b.i.d. to q.i.d.; alcoholism, 10 mg t.i.d. or q.i.d. in first 24 hours, then 5 mg t.i.d. or q.i.d. as needed; adjunctively in skeletal muscle spasm, 2 to 10 mg t.i.d. or q.i.d.; adjunctively in convulsive disorders, 2 to 10 mg b.i.d. to q.i.d. *Geriatric or debilitated patients:* 2 to 2½ mg, 1 or 2 times daily initially, increasing as needed and tolerated. (See Precautions.) *Children:* 1 to 2½ mg t.i.d. or q.i.d. initially, increasing as needed and tolerated (not for use under 6 months).

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Although addicts are encouraged to participate in the program voluntarily it is open to those who are referred by private physicians, other health resources, courts and correctional authorities.

MURRAY GRANT, M.D., D.P.H.
D.C. Director of Public Health

Warnings of Cold Water Dangers

THE HAZARDS OF PROLONGED IMMERSION in cold water are stressed by the American Red Cross, as it warned early spring boat users, fishermen, and people playing along the shores of northern waters to exercise extra precautions to avoid "falling in" accidents. In many areas of the country, rivers, lakes, and ocean waters will not warm up from winter's effects until June.

Mr. A. B. Murphy, National Director of Safety Services for the Red Cross, listed the following precautions, which he said were not necessarily in order of importance, since violation of any one might trigger an accident or shorten the survival immersion time:

1. Use the proper craft and equipment for existing conditions of wind and water.

2. Do not overpower or overload your boat, and keep all weight as low as possible in it.

3. Keep the interior of the boat free of water, especially in rough weather. The center of gravity of any water in the bottom of the boat will shift when the boat is heeled and may seriously decrease a boat's stability.

4. Small craft should use the buddy system. It is advantageous to have a second craft nearby to assist you in case of accident.

5. Check weather reports before using small boats in exposed areas.

6. Know how to handle your craft. This should include a working understanding of everything that affects the stability of the vessel, such as location of its center of gravity and center of buoyancy. Team work is essential in paddling canoes or sailing small boats to prevent dangerous changes in the balance and trim of the craft.



DR. WILLIAM P. HERBST (right), a graduate of Georgetown University School of Medicine (Class of 1915), receives the Achievement Award for 1968 from the Georgetown Alumni Club of Metropolitan Washington. Senator J. Caleb Boggs, of Delaware, toastmaster and an alumnus of Georgetown University, presented the citation at a St. Patrick Luncheon at the Hotel Statler-Hilton, March 15. Dr. Herbst is President of the American Association of Genitourinary Surgeons and Emeritus Professor of Clinical Urology at Georgetown University.

7. Know how to take care of yourself in the water. Swimmers are less likely to panic in case of upset.

8. Wear a vest type life preserver while boating under adverse conditions. Weak swimmers and nonswimmers should wear one at all times when around the water.

9. Wear 2 or 3 suits of thermal underwear and other suitable clothing if there is a chance of a cold water accident. Wet suits such as scuba divers wear are frequently worn by white-water canoeists and frostbite dinghy sailors.

10. Learn small craft handling skills from a competent instructor.

11. Get out of cold water as quickly as you can. Remember: Cold water can kill!

The U.S. Navy, as a result of studies conducted under arctic conditions, recommends the following first aid procedures for cold water immersion victims:

If feasible, a victim taken from cold water should be warmed very quickly in a hot bath, 105 to 110°F. Hot water should be added continuously until the body is warmed.

Body temperatures should be raised very slowly if hot baths are not possible. Add extra clothing

and keep the patient in a cool room; do not bring him into a warm room.

Hot fluids may be given as tolerated.

Medical care should be summoned as quickly as possible.

Reorganization of HEW

MR. WILBUR J. COHEN, Under Secretary of Health, Education and Welfare, has been named by President Johnson to succeed Mr. John W. Gardner as Secretary of HEW.

Mr. Cohen was employed by the Federal Government in the early thirties and helped draft the Social Security program. He was the leading architect of Medicare and played a prominent role in getting Congressional approval of the program.

Mr. Cohen has announced major steps in a reorganization of HEW's health activities. Unified direction of its major health agencies was assigned to Dr. Philip R. Lee, Assistant Secretary for Health and Scientific Affairs. Dr. William H. Stewart, Surgeon General of the Public Health Service, was named principal deputy to Dr. Lee.

Dr. Lee was given direct authority over the Public Health Service and the Food and Drug Administration. Dr. Stewart and Dr. James L. Goddard, Food and Drug Commissioner, will report directly to the Assistant Secretary while continuing to carry out their present administrative functions.

Dr. Lee's responsibility also was expanded to include overall health policy direction and coordination of other health programs, including Medicare, Medicaid and the health activities of the Children's Bureau.

In a reassignment of agency responsibilities, the National Institutes of Health were expanded to include the present NIH, the Bureau of Health Manpower, and the National Library of Medicine. The Health Services and Mental Health Adminis-

tration were set up with responsibility for all other functions previously assigned to the Public Health Service. These 2 new agencies, along with the present Food and Drug Administration, now make up an expanded and more comprehensive Public Health Service.

Dr. James A. Shannon, Director of the National Institutes of Health, was named Director of the newly constituted NIH. Dr. Robert Q. Marston, Director of the Division of Regional Medical Programs, was named Acting Administrator of the Health Services and Mental Health Administration. Dr. Goddard continues as Commissioner of Food and Drugs. The heads of these 3 agencies will report directly to Dr. Lee under the new organizational setup.

First Meeting of Past Presidents' Club

TWENTY-ONE PAST PRESIDENTS of the Medical Society of the District of Columbia met for cocktails at the home of Editor Wallace Yater, 4907 Indian Lane, N.W., on March 26. They were:

Charles S. White (1927)
Daniel L. Borden (1940-41)
A. Magruder MacDonald (1942-43)
William P. Herbst (1946-47)
Raymond T. Holden (1947-48)
William M. Ballinger (1950-51)
Wallace M. Yater (1952-53)
Herbert P. Ramsey (1953-54)
Preston A. McLendon (1954-55)
W. Ross Morris (1955-56)
Ralph M. Caulk (1956-57)
James W. Watts (1957-58)
W. LeRoy Dunn (1959)
Victor R. Alfaro (1960)
Donald Stubbs (1961)
J. Spencer Dryden (1962)
Karl C. Corley (1963)
Edward W. Nicklas (1964)
Paul R. Wilner (1965)
Robert J. Coffey (1966)
Henry C. Ecker (1967)

Also present were Dr. William S. McCune, President; Dr. Frank S. Bacon, President-elect; Mr. Theodore Wiprud, former Executive Director; and Mr. Warren E. Magee, Legal Counsel to the Medical Society.

It was decided not to have a formal organization. There will be no officers and no dues. The Club is to meet once a year for cocktails, preferably between the middle and end of March, at the home of one of the Past Presidents. Next year the hosts will be Drs. Herbst, Alfaro and Fred R. Sanderson. Co-hosts with Dr. Yater for the first meeting were Drs. McLendon and Nicklas.

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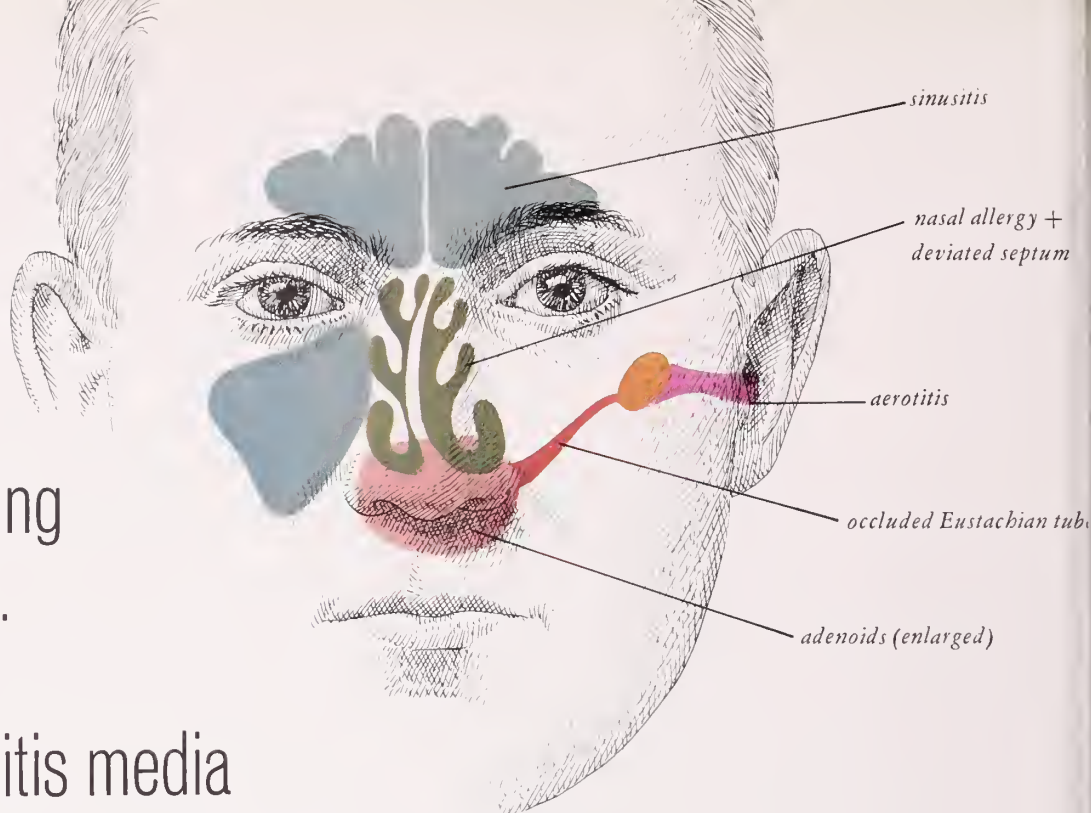
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this issue:
serous otitis media
an original article
by Robert H. Lofgren, M.D.

the complaining earache... key to serous otitis media

Robert H. Lofgren, M.D.

Associate Surgeon, Massachusetts Eye and Ear Infirmary, Boston, Massachusetts



Serous otitis media is probably the most common ear problem in children, especially in the winter-time. Diagnosis is usually easy in adults, but may be quite difficult in children, especially the very young child where one has to depend almost entirely on the physical findings.

The symptoms of serous otitis are a fullness in the ear, a mild hearing loss and mild earache. The earache can best be described as a "complaining earache" instead of a "screaming earache" as found in purulent otitis media. A young child may be irritable and pull at the ear. In milder cases, and as the ear recovers, gurgling and popping noises can be heard in the ear.

On examination one may see a yellow tympanic membrane and if a fluid level is present the diagnosis becomes easy. However, the eardrum may be dull gray, or slightly pink, or even perfectly normal. Pneumomassage using a Siegle otoscope or a closed-head electric otoscope must be done on both ears, otherwise the diagnosis will be frequently missed. Attempted movement of the drum with the pneumatic otoscope produces either a sluggish motion of the drum or no motion at all instead of the easily movable normal drum. The Rinne test is negative and there is a 15-20 decibel conductive hearing loss. The bone conduction may be better than normal and an air-bone gap may exist even with the air conduction within normal limits. Occasionally one finds a

false nerve deafness on the audiogram when thick glue-like fluid causes immobility of both the oval and round window. Both conditions return to normal when the fluid is removed, but they make the interpretation of screening audiograms very difficult.

There is no single cause for serous otitis. One factor always present is blockage of the eustachian tube, but this alone is not enough to produce fluid. There must also be an inflammatory reaction. Blockage of the eustachian tube may be caused by many conditions. In children the most common cause is enlarged adenoids. In the summer the next most common cause is allergy. Upper respiratory infections or influenza are common causes in the winter. Nasal allergy, acute and chronic sinusitis, nasal septal deformity and cleft palate can all cause eustachian tube obstruction. Some children may have a congenitally small eustachian tube, but fortunately they usually "grow out of the problem."

The first sign of a nasopharyngeal tumor is often a serous otitis. One must always rule this out in any adult who later in life develops repeated or persisting serous otitis. Causes sometimes overlooked are nasogastric tubes after surgery, simple obesity and cardiorenal disease, which may produce congestion in the mucosal lining of the eustachian tube. In recent years we have been seeing a new cause—acute otitis media, where the patient is adequately treated with antibiotics but where drainage has not been

established either through the eardrum or down the eustachian tube. A sterile exudate is left in the middle ear.

The inflammatory response may be caused by a marked negative pressure as in air otitis from flying, or it may be from a mild bacterial or viral infection in the middle ear. Serous fluid is a good culture medium and will frequently go on to purulent otitis media, especially if the original blockage was caused by an infectious process such as acute rhinitis or adenoiditis. When the infection heals there may be scarring in the middle ear mucosa. Mucous glands develop in this tissue and pour out a thick mucoid material. This ear usually looks normal until a pneumatic otoscope is used. The objectives in treating serous otitis are to remove the obstructing agent and to provide drainage from the middle ear. Often this can be accomplished by decongestants and nose drops. If large obstructing adenoids are present they should be removed. Sinusitis should be treated with oral decongestants or nose drops, plus antibiotics where indicated. Nasopharyngeal tumors should be treated. Allergies should be treated with antihistamines and, where indicated, by desensitization.

If the fluid does not clear with medical treatment within a week or two, a myringotomy should be done. If there is a question of active infection or if the fluid looks purulent, as is seen at the conclusion of acute otitis, cultures are taken. On adults this can be done in the office without anesthesia. It is no more painful than an intravenous needle for a blood test. A good safe topical anesthetic has a tremendous psychological value to the patient. Children under the age of 1 require no anesthesia. Between the ages of 1 and 3 anesthesia is not absolutely essential although a general anesthetic may be used to avoid the child's possible mistrust at follow-up examinations. I usually do the myringotomy at the same time as the adenoidectomy if the adenoids are enlarged. Once drainage has been established with decongestants or by myringotomy, positive pressure inflation of the middle ear is invaluable in forcing out the serous fluid and keeping it from reforming. The patient can do this himself by performing the Valsalva maneuver. This should be done several

times a day, by taking a deep breath, holding the nose and blowing hard against the closed lips for a second or two.

In resistant cases where the fluid reforms as soon as the myringotomy heals, small polyethylene tubes are inserted through the myringotomy site. Insertion of the tubes, even in adults, usually requires an anesthetic. Good anesthesia can be obtained by infiltrating the canal wall with a local anesthetic, using a #27 needle. Once inserted the patient has no sensation of the tubes' presence. Be careful to caution the patient or parents not to allow any water to get into the ear canal while a myringotomy is open or a tube is in place. Water can be kept out by a pledget of lamb's wool in the ear canal or a cotton pledget thickly coated on the outside with petroleum jelly. I check these patients a week after a myringotomy to be sure it is healed and at two month intervals until the tubes have fallen out, usually within three to six months after insertion.

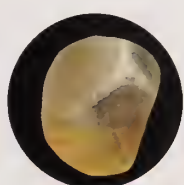
The mucoid type of fluid is so thick and tenacious that it is appropriately called a glue ear. It is aspirated only with difficulty through the eardrum, and occasionally must be removed through a tympanotomy. This thick, glue-like fluid is prone to recur, as the myringotomy usually heals long before the mucous membrane has returned to normal. Repeated myringotomies, as many as ten or twenty, were formerly required for this condition. Now polyethylene tubes are inserted initially when this thick, glue-like material is found. At times a subacute mastoiditis may accompany the serous otitis, which will necessitate a simple mastoidectomy before the condition can be eradicated. Usually the thin serous fluid readily responds to decongestants or to a myringotomy and removal of the eustachian tube obstruction. Occasionally, however, even serous fluid will repeatedly reform. For this, resection of the tympanic plexus of nerves which lies on the promontory of the middle ear has been carried out, as the tympanic branch of the glossopharyngeal nerve is the secretomotor nerve to the ear.

Failure to diagnose serous otitis is the most common cause of the recurrent, almost continuous otitis me-

Otoscopic Views



Normal



Acute Serous



Acute Purulent



Chronic Serous

dia seen in young children. In these cases a myringotomy will frequently provide a long-term cure without adenoidectomy or any other surgery. Failure to do this may allow the condition to go on to acute or subacute mastoiditis. Adhesive otitis media with scar tissue binding down the ossicles or tympanosclerosis may also result with permanent impairment of hearing. The prognosis for hearing with adhesive otitis or tympanosclerosis is usually poor. If the adhesions are removed, they reform, and the same is frequently true of tympanosclerosis even after a tympanoplasty. For many of these people a hearing aid is the only solution. The constant negative pressure in long standing serous otitis media may draw in either Schrapnell's membrane or the posterior superior portion of the eardrum forming a pocket to cause a chronic otitis media with cholesteatoma, which may not become apparent until twenty or thirty years later.

The non-medical complications of improper diagnosis or treatment may be even more serious. The irritable child, the frequent bouts of acute purulent otitis media with pain and fever, the expense of antibiotics and doctors, and the time lost from school or work affect the entire family.

In summary, serous otitis has many causes. There is a blocking of the eustachian tube and an inflammatory reaction in the middle ear mucosa, the latter usually caused by a mild infection. The treatment is to provide immediate drainage by decongestants and where necessary, by a myringotomy. The obstructing agent must be removed by surgery if it is adenoid or by oral decongestants, and antihistamines or nasal spray if it is an upper respiratory infection or allergy. Occasionally resistant cases require plastic tubes placed through the eardrum or other more radical surgery. Failure to treat properly leads to hearing loss which may be permanent, repeated acute otitis media or possibly even chronic otitis media with cholesteatoma.

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News & Personals

Summary of Executive Board Actions

Proceedings of March 25 Meeting

Dinner for the Board members was served in the Exhibit Hall of the Medical Society. Dr. Edward W. Nicklas, Chairman, presided at the meeting which was attended by Drs. Frank S. Bacon, Raymond T. Holden, John J. Hughes, William S. McCune, Jed W. Pearson, Jr., Gudrun Augustin-Rueckert, Paul R. Wilner, Robert J. Coffey, Henry D. Ecker, and Mr. Thomas Sadler, Acting Secretary. Present by invitation were Dr. Murray Grant, Director of the D. C. Department of Public Health, and Dr. Warren D. Brill, Chairman, and Dr. Donald D. Haut, member, of the Committee on Public Information and Education. The meeting was called to order at 7:25 p.m.

The minutes of the February 26, 1968 meeting were approved as mailed.

Committee Meetings: The Secretary reported the following committees had met since the last meeting of the Board:

February 27	Committee on Blood Banks
March 4	Committee on Continuing Education
6	Committee on Liaison with the Clergy
6	Fee Review Committee
7	Traffic Committee
7	Committee on Medical Aspects of Sports
12	Board of Credentials
12	Committee on Aviation Medicine
12	Committee on Ruffin and Other Bequest Funds
12	Committee on Liaison with the Clergy
18	Committee on Continuing Education
19	Grievance Committee
25	Rehabilitation Committee

Board of Credentials: On recommendation of the Board of Credentials, 13 applicants were elected to Active membership and 5 to Associate membership. Their names appear on page 296. Approval was given to the following changes in membership status:

Transfers

Active to Associate: Rafael A. Borgos, Jean O. Feys,

Edmond J. Fitzgerald, James P. Hartley, Leo C. Varden, and J. Francis Warren
Active to Special: Howard E. Newman

Resignations

Associate: Huntley L. Cate, Lester I. Fox, James L. Keating, and Lewis K. Woodward, Jr.

The dues of Dr. Howard T. Karsner and Dr. James R. Costello were remitted because of illness. Dr. Karsner's membership status was elevated to Honorary.

Proposed Tri-level System of Health Care: D. C. Health Director Grant spoke at some length on the proposed tri-level system of health care outlining details of the proposal. He emphasized that the biggest problem was medical manpower and that use of ancillary personnel is contemplated in areas where this can be done.

As a first step in improving relations between the Health Department and the Medical Society it was agreed that Dr. Grant and President McCune meet informally once a month prior to the Society's Board meeting. It was also agreed that the President write a letter to Dr. Grant stating that the Society is in favor of bringing medical care to the medically indigent through neighborhood clinics.

Press and Radio-TV Dinner: Dr. Brill and Dr. Haut joined the meeting as representatives of the Committee on Public Information and Education to discuss the annual Press and Radio-TV Dinner. It was the opinion of Dr. Brill, Chairman of the Committee, that the Society forego the dinner this spring and have a cocktail party for the press in the fall just prior to the SCIENTIFIC ASSEMBLY. The Board approved this proposal and suggested that if possible a speaker of renown be present.

Scientific Assembly Progress Report: Dr. McCune gave a progress report on the forthcoming SCIENTIFIC ASSEMBLY. He mentioned that to date a total of 35 exhibits had been sold, which already exceeds projected estimates.

Committee for Alienated Youth: Dr. McCune reported on this Committee's activities, pointing out that Dr. John W. Barrett had been successful in getting 8 residents from George Washington University Hospital to go to the Church of the Pilgrims on alternate Wednesday nights for appropriate discussion and talks on such topics as dangers of drugs. It was agreed that a suitable expression of appreciation be extended these residents for their services.

It was also agreed that the names of these residents be submitted to the Board of Credentials with the recommendation that they be approved for Resident-Intern membership, with dues remitted.

Luncheon and Dinner Expenses: A motion was made and carried that the Medical Society pay for all committee lunches but that Board members continue to pay for their dinners.

Proposed Expense Account for President of Society: It was voted to set aside a fund of \$200.00 for the President and President-elect for personal expenses incurred in the carrying out of their official Society duties and that this be exclusive of any unusual expense, e.g., in connection with the annual SCIENTIFIC ASSEMBLY, such expense to be paid in full by the Society. It was agreed that the President and President-elect would submit vouchers monthly for their expenses.

Report on Blood Bank Committee Meeting of February 27: Dr. Bacon spoke on Regulation Title 42, Part 73, of the Public Health Service which prohibits shipment of blood and blood components. It was voted that the President of the Society write a letter to the Food and Drug Administration requesting a change in this regulation and, also, that this request be presented to the AMA in the form of a resolution.

Committee on Liaison with the Clergy: Dr. McCune reviewed the forthcoming symposium to be held in early May with clergymen and physi-

cians. The Board agreed that the Chairman of the Committee be informed that the Davidson Lecture may be held annually if desired but that maximum expenditure for the Lecture cannot exceed the income derived from the Davidson Fund, which is about \$260.00 annually.

Other Business

1. The Board approved that an item be placed in the Newsletter to the effect that the Medical Committee on Human Rights is asking for volunteers to staff the Health Stations during the forthcoming Martin Luther King Poverty March which begins April 22.

2. Approval was given to providing a membership list of the Society to the Washington Psychiatric Society for the distribution of its Directory.

3. It was agreed that the matter of proposed licensure for psychologists be referred to the Committee on Mental Health for its advice and that the President take indicated action.

4. It was voted to donate up to \$100.00 to help defray costs of the Ambulance Helicopter Symposium, April 11, and the cost of the crash bag.

5. A motion to send 300 of the Society's vases commemorating its 150th anniversary to San Francisco for distribution at the June AMA meeting was approved.

6. Approval was given to publicizing the Doctors' Forum on Medicine in Scandinavia and the U.S.S.R. in the Newsletter for informational purposes only.

7. It was voted to send out a questionnaire to Society members requesting their wishes on more frequent business and/or scientific meetings.

8. The subject of correspondence directed to the Honorable John L. McMillan, Chairman of the House Committee on the District of Columbia, and to each member of the Committee was discussed by Dr. Nicklas, who pointed out that con-

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templated legislation would remove exemptions from the unincorporated business tax, resulting in a surtax being imposed upon physicians practicing in the District of Columbia. It was hoped that Dr. McCune would be invited to represent the Society in opposing this proposed legislation.

9. The Board agreed that an item be placed in the Newsletter requesting the need of donations to the 12th Street Y.M.C.A.

There being no further business, the meeting was adjourned at 11:40 p.m.

► GENERAL NEWS

Another Medical Seminar Cruise is being sponsored this fall by the Georgetown University School of Medicine. The luxurious liner, *S.S. Victoria*, will sail from New York on November 6, 1968 for a 12-day cruise in the Caribbean waters. A scientific program of formal lectures, panels and discussions on a wide variety of subjects will be presented. There will be 24 hours of instruction.

Those interested in receiving literature and further information should address their inquiries to the Allen Travel Service, Inc., 565 Fifth Avenue, New York, N.Y. 10017.

The Washington Psychiatric Society held its annual business meeting and election of officers on March 22 in the D. C. Medical Society's Exhibit Hall. As customary at this meeting, the guest speaker was the President of the American Psychiatric Association, this year Dr. Henry W. Brodin, who is Director of the Western Psychiatric Institute and Clinics of the University of Pittsburgh.

At the business session the following officers were elected for the ensuing year:

Dr. John E. Nardini, *President-elect*; Dr. Robert B. Neu, *Secretary*; and Dr. Edward I. Kushner, *Treasurer*.

Dr. Dale C. Cameron, President-elect during the past year, has assumed the office of President of the Society.

Mr. Joseph P. Sanford, Executive Secretary of the Kentucky Medical Association and Managing Editor of the *Journal of the Kentucky State Medical Association*, died, March 25, 1968. He was a director of the State Medical Journal Advertising Bureau, of which the *MEDICAL ANNALS* is a participant. The Editorial Board of the *ANNALS*

shares with his many friends and associates in the loss to the Kentucky Medical Association of an able and popular director.

► PERSONALS

Dr. James J. Feffer has been selected to become Associate Dean for Clinical Affairs of George Washington University School of Medicine, effective July 1. This is a new position in line with the clinical expansion planned for the University's Medical Center that encompasses the Hospital, Clinic and School of Medicine.

Dr. Feffer
accepts a newly
created position at
George Washington
University, July 1



Dr. Feffer has been in private practice in Washington for more than 25 years. He is Clinical Professor and Chairman of the Section of Pulmonary Diseases at George Washington. During the past year, as President of the American Society of Internal Medicine, he traveled and lectured in 20 states on the implementation of Medicare and Medicaid as well as on comprehensive health planning and regional medical programs.

Dr. Feffer is a graduate of Indiana University School of Medicine. He served his internship and residency at Kings County Hospital, New York City, and was a medical officer at Glenn Dale Hospital, Glenn Dale, Maryland, before going into private practice.

At the 49th Annual Session of the American College of Physicians in Boston, April 15, **Dr. Wallace M. Yater** completed 35 years as an official of the College, breaking its longevity record for service. He served for 16 years as Governor for the District of Columbia, 7 years as Regent, and 12 years as Secretary-General. The Boston meeting was attended by some 7,000 registrants.

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constipation; amenorrhea; miosis; mild fever; weight gain; hypotensive effects, sometimes severe with I.M. administration; epinephrine effects may be reversed; dermatological reactions; parkinsonism-like symptoms on high dosages (in rare instances, may persist); lactation and moderate breast engorgement (in females on high dosages); and less frequently, cholestatic jaundice (use cautiously in patients with liver disease). Adverse reactions occurring rarely, include: mydriasis; agranulocytosis; skin pigmentation; epithelial keratopathy; lenticular and corneal deposits (after prolonged substantial doses).

Available: Tablets, 10 mg., 25 mg., 50 mg., 100 mg. and 200 mg.; Spansule[®] capsules, 30 mg., 75 mg., 150 mg., 200 mg. and 300 mg.; Injection, 25 mg./cc.; Syrup, 10 mg./5 cc.; Suppositories, 25 mg. and 100 mg.

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Dr. Margaret M. Kenrick, Associate Professor of Physical Medicine and Rehabilitation of Georgetown University School of Medicine, was appointed Chairman of the Department, effective March 8. She has been associated with the Department since 1956, first as Assistant Director and later as Acting Director.



Dr. Kenrick
who now heads
the Department of
Physical Medicine
at Georgetown

A native of New York City, Dr. Kenrick received her medical degree from New York Medical College in 1952. She was instrumental in organizing "Open Doors," which is devoted to removing architectural barriers that limit the activities of people in wheelchairs. She is serving on the Board of Directors of the D. C. Chapters of United Cerebral Palsy and the National Paraplegic Foundation.

Dr. Robert S. Higdon, Professor and Chairman of the Department of Dermatology, George Washington University School of Medicine, was one of two members of the faculty to receive "Golden Apple Awards" from medical students at the close of their Medical School Follies, March 9.

Dr. Higdon was cited as the clinical scientist who "contributed the most to students in their third and fourth years of medical school." He came to George Washington when he retired as Colonel in the U. S. Army Medical Corps in 1963. In addition to his teaching position he is Chairman of the faculty's Advisory Committee on Student Affairs.

Dr. John Chandler Smith, Associate Professor of Pathology, was cited as the basic scientist who "contributed the most to students in their first and second years of medical school."

Dr. Nina B. Woodside, Chief of the Bureau of Chronic Disease Control of the D. C. Department of Public Health, was one of 7 Government career women selected to receive the Eighth Annual

Federal Woman's Award, presented March 14 at the Statler-Hilton Hotel. She was cited for her "superior leadership, initiative, and professional and administrative competence in developing a new range of public health services in adult health and geriatrics."

Dr. Woodside received her undergraduate degree at George Washington University and her medical degree from the Women's Medical College of Pennsylvania in Philadelphia. She earned her Master's degree in public health in 1963 at Johns Hopkins University. In March 1964 she joined the D. C. Department of Public Health and established and organized the Bureau of Chronic Disease Control.



Dr. Woodside,
second youngest
recipient of the
Federal Woman's
Award

Among many new and improved services to the public she has promoted are medical aid for the aged, geriatric clinics, a counseling and referral program for military inductees rejected for medical reasons, multiphasic screening and cervical cancer clinics, and a program to control and reduce cigarette smoking.

Dr. William B. Walsh, founder and President of Project HOPE, and the *S. S. Hope* received the 1968 Lawrence C. Kline World Peace Award at a banquet held at the Warwick Hotel in Philadelphia, March 12. The award, consisting of a monetary gift and a plaque, is conferred triennially, or at more frequent intervals if appropriate. It is given to "provide suitable recognition to that individual or group, of any race, color or creed, having made a conspicuous contribution to the advancement of the cause of peace and understanding among nations and men."

Dr. Charles A. Hufnagel, Professor of Surgery and Director of the Surgical Research Laboratory of Georgetown University School of Medicine, served for 2 weeks aboard the *S. S. Hope*. He joined the ship, April 22, at Colombo, Ceylon, and



DR. WILLIAM H. COOPER in the operating room with **Dr. Masakuni Suzuki**, Professor of Obstetrics and Gynecology at the University of Niigata, Japan. Dr. Cooper was visiting professor at the University during a post-convention tour of the Far East which followed the meetings of the International Congress of Obstetrics and Gynecology in Sydney, Australia, in September.

returned to Georgetown, May 5. As part of the ship's medical team he participated in a teaching-training program on open-heart surgery. Among the medical personnel that he taught was an open-heart surgery team from Ceylon that he helped to train at Georgetown in 1966.

Dr. Luther L. Terry, formerly Surgeon General of the Public Health Service and now Vice President, in charge of medical affairs, at the University of Pennsylvania, was one of 15 leaders in medicine, law, religion, education, and communications named by the American Heart Association to study the ethical, moral and legal implications of heart transplants and similar operations on humans. The Ethics Committee held its first meeting in New York, March 26 and 27. Dr. Eugene A. Stead, Professor of Medicine at Duke University, is Chairman.

Dr. Haskins K. Kashima has joined the faculty of Georgetown University School of Medicine as Instructor in Otolaryngology. A native of San Francisco, Dr. Kashima received his medical degree from Yale University in 1958. Before coming to Georgetown he was chief resident in otolaryngology at Barnes Hospital, St. Louis.

Dr. Patrick J. Doyle, Chairman of the Department of Community Medicine and International

Health of Georgetown University School of Medicine, has been elected Councillor-at-large for a 3-year term by the American Association of Mental Deficiency. The Association is made up of almost 8,000 members working as professionals in the field of mental retardation. Dr. Doyle is a member of President Johnson's Committee on Mental Retardation.

Patients Needed at Georgetown

THE COÖPERATION OF PHYSICIANS is requested in the referral of patients to the Georgetown University Urologic-Neurologic Center, the first of its kind supported by the U.S. Public Health Service.

A study is under way to determine what can be done about urinary tract disorders and prevention of renal disease secondary to neurogenic diseases.

Of interest are pediatric or adult patients with neurogenic disease affecting the urinary tract.

Patients will be admitted to Georgetown University Hospital, whenever necessary, and receive full diagnostic work-up and therapy. Complete reports and recommendations for therapy will be sent to the referring physician.

Physicians interested in having their patients considered for admission to this Center may write to Dr. Roger Baker, Director of the Division of Urology, Georgetown University School of Medicine, Washington, D.C. 20007; telephone 625-7116.

► OBITUARIES

Thomas Parran, M.D.

(1892-1968)

DR. THOMAS PARRAN, Surgeon General of the U.S. Public Health Service from 1936 to 1948, died, February 15, 1968 in a hospital in Pittsburgh, Pa. He was an Honorary member of the Medical Society of the District of Columbia.

Dr. Parran was born, September 28, 1892, near St. Leonard in Southern Maryland on a farm where his family had lived since the first Parran came over from England about 1650. Prepared for college by a private tutor, he received his undergraduate degree from St. John's College, Annapolis, Md., in 1911. In 1915 he was graduated with honors from Georgetown University School of Medicine and at the same time was awarded the

degree of Master of Arts from St. John's College. He interned at Sibley Memorial Hospital.

In 1917 he was commissioned an officer in the Regular Corps of the Public Health Service. After serving in 14 states on public health research and administrative assignments, and from 1930 to 1936 as Commissioner of Health for the State of New York, he was appointed Surgeon General of the Public Health Service in April 1936 and reappointed in 1940 and 1944.

During his long career as a Public Health officer he received many Presidential assignments to head conferences, delegations, and special studies concerned with public health problems in this country and abroad. One of these was as delegate and chairman of the conference which met in New York City in May-June 1946 to establish a World Health Organization.

Dr. Parran will be particularly remembered for his services in the field of venereal disease control. He contributed many articles to the literature on this subject and on preventive medicine and public health, medical care, public health organization, nutrition, milk sanitation, maternal and infant mortality, and tuberculosis. He was the author of "Shadow on the Land" (1937) and co-author of "Plain Words About Venereal Disease" (1941).

Dr. Parran received numerous honorary degrees, citations and awards. He was a member of many scientific organizations, including the American Medical Association, the American College of Physicians, the American College of Surgeons, the New York Academy of Medicine, the American Public Health Association, and the Association of Military Surgeons of the United States.

When he left the Public Health Service in 1948 he became Dean of the new Graduate School of Public Health at the University of Pittsburgh, from which position he retired in 1958.

His wife, Mrs. Carroll Parran, died in 1961. He leaves 4 sons, Thomas, Benjamin, Theodore and Richard.

John Reed Dull, M.D.

(1892-1968)

Dr. JOHN R. DULL, general practitioner and anesthesiologist at Casualty Hospital for many years, died, February 17, 1968 at the Hospital after a long illness.

Dr. Dull was born at Glade, Pennsylvania, March 31, 1892 and had lived in the District of Columbia since 1920. He graduated in medicine from Georgetown University School of Medicine

in 1923. He also had earned a degree in education from California State Teachers College and had taught school in Pennsylvania before he came to Washington.

Dr. Dull served in the Army Medical Corps at Walter Reed Army Hospital during World War II.

Elected to Active membership in the Medical Society of the District of Columbia in 1930, he became a Life member in 1965. He was a member of the American Legion.

Surviving him are his wife, Mrs. Roberta Dull, at 5900 16th Street, N.W.; 2 sons, John R. Dull, Jr., of 2419 Evans Drive, Silver Spring, Md., and Rex E. T. Dull of 13008 Greenmount Road, Beltsville, Md.; and a daughter, Mrs. Marvel R. Freud, of 13131 Cleveland Drive, Rockville, Md. He also leaves 3 sisters, Mrs. Harry Brugh, Mrs. Marion Musser, and Miss Katherine Dull, all of Rockwood, Pa.

William Clark Sparks, M.D.

(1883-1968)

Dr. WILLIAM CLARK SPARKS, Washington physician for almost 40 years, died, February 22, 1968, at the Golden Age Hospital in Pasadena, California.

Dr. Sparks was born in Madison County, Va., August 20, 1883. He graduated from the University of Virginia School of Medicine in 1908 and interned for a year each at Emergency Hospital and the Hospital of St. Barnabas in Newark, N. J. After practicing briefly in Danville, Va. and Raleigh, West Va., he came to Episcopal Eye, Ear and Throat Hospital to study otolaryngology and served as assistant and resident physician during 1914.

In 1915 Dr. Sparks began his private practice in District of Columbia as otolaryngologist and general practitioner. In the 1940's he was chief of staff at Episcopal Hospital (now a part of the Washington Hospital Center).

Dr. Sparks planned to retire in 1953 but instead accepted the post of adjudication officer for the Veterans Administration Hospital in Seattle, Washington. He retired in 1961.

A diplomate of the American Board of Otolaryngology, he was an Active member of the Medical Society of the District of Columbia from 1915 to 1944 and continued as an Associate member until 1965. He was a charter member of the Army-Navy Club.

Survivors include a daughter, Sister Mary

Emily Ann of the Holy Cross Order, Mountain View, Calif.; a son, William Clark Sparks, Jr., of Pasadena, Calif.; and a brother, Henry Sparks, of 321 North Washington Street, Falls Church, Va.

Maurice Lyndon Townsend, M.D. (1877-1968)

DR. MAURICE L. TOWNSEND, a former member of the Medical Society of the District of Columbia, died at his home in Society Hill, South Carolina, March 23, 1968.

Dr. Townsend was born in Richmond, Ind., February 18, 1877. He graduated from Indiana Medical College, the Department of Medicine of Purdue University, in 1906. Following his graduation, he practiced in Victoria, Mexico, for 5 years, and in Charlotte, N. C. from 1911 to 1924. He interrupted his practice in Charlotte by service in the U. S. Army during World War I, when he held the commission of Lieutenant Colonel in the Medical Corps.

During the years he lived in Washington, from 1926 until he retired in 1940, he was Director of the old Chevy Chase Sanatorium, which closed when he left. During that time he was an Active member of the Medical Society of the District of Columbia. He was a member of the Washington Civitan Club and in 1933 was elected President of Civitan International.

He leaves his wife, Mrs. Ruth Poindexter Townsend, and 2 daughters, Mrs. Ernest G. Moore, of 7705 Old Chester Road, Bethesda, Md., and Mrs. J. F. Casey, of Atlanta, Ga.

Hyperosmolar Coma—Cohen, Kramer and Parrish

(Continued from page 261)

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Thoracic Outlet Syndrome—Keshishian and Stanton

(Continued from page 265)

ADDENDUM: Since this manuscript was submitted we have operated in 2 additional cases which are worthy of mention. The first was that of a 19-year-old junior-college student who had pain in the supraclavicular fossa and paresthesias associated with discoloration of both hands for 6 months. Arteriography showed no evidence of vascular compression. However, the persistent tenderness and paresthesias strongly suggested brachial plexus irritation. X-ray films of the chest showed well-developed cervical ribs bilaterally. The right side was the more symptomatic and, accordingly, the first rib and the cervical rib on the right were removed by a transaxillary approach with gratifying results.

The second patient was a 57-year-old white man who worked in the Water Department who had gradually developed incapacitating paresthesias and discoloration of the first 3 fingers of the right hand. These were so severe that it was painful and impossible for him to grasp, or touch an object, to perform his duties, and even to shake hands with anyone. The ulnar pulse on the right was absent, but the brachial pulse was strong. Allen's test was positive. Retrograde aortograms showed a kinked right axillary artery consistent with the pectoralis-minor compression syndrome. Transection of the pectoralis-minor tendon and thoracic sympathectomy through an axillary approach were performed. There was dramatic relief of the pain, paresthesias, and the discoloration of the fingers.

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Precautions: Some individuals may experience drowsiness, anorexia, and slight gastric distress. If excessive drowsiness occurs, it may be necessary to increase the interval between doses. Persons on full dosage should not operate any vehicle. Use may result in overgrowth of nonsusceptible organisms. If infections appear during therapy, appropriate measures should be taken. Infections caused by beta-hemolytic streptococci should be treated for at least 10 full days to help prevent rheumatic

fever or acute glomerulonephritis. Use of tetracycline during tooth development may cause discoloration of teeth.

Adverse Reactions: Gastrointestinal—anorexia, nausea, vomiting, diarrhea, stomatitis, glossitis, enterocolitis, pruritus ani. Skin—maculopapular and erythematous rashes (a case of exfoliative dermatitis has been reported); photosensitivity; onycholysis and discoloration of nails (rare). Kidney—rise in BUN, apparently dose related. Hypersensitivity reactions—urticaria, angioneurotic edema, anaphylaxis. In young infants, bulging fontanels following full therapeutic dosage has been reported. This has disappeared rapidly when drug was discontinued. Teeth—dental staining (yellow-brown) in children of mothers given tetracycline during the latter half of pregnancy and in children given the drug during the neonatal period, infancy, and early childhood. Enamel hypoplasia has been seen in a few children. Blood—anemia, thrombocytopenic purpura, neutropenia, eosinophilia. Liver—cholestasis (rare), usually at high dosage. If adverse reaction or idiosyncrasy occurs, discontinue medication and institute appropriate therapy.



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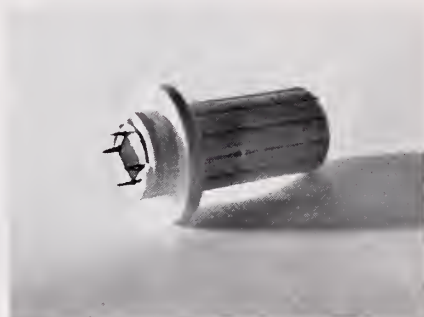
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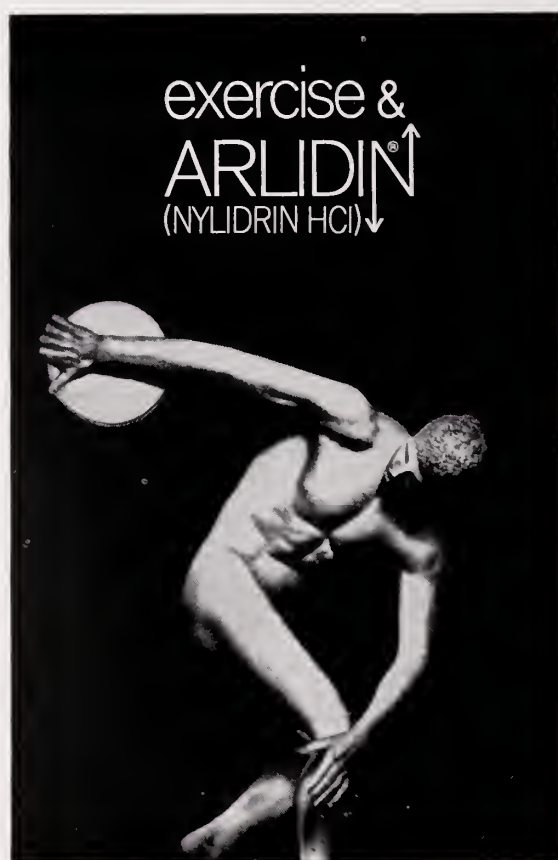
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May 25-26: Maryland Academy of General Practice. Statler-Hilton Inn, Annapolis. Address: Mrs. Dorothy E. Holman, Executive Secretary, 7609 Hillsway Road, Baltimore, Md. 21234.

May 27-29: American Ophthalmological Society. The Homestead, Hot Springs, Va. Address: Dr. Samuel D. McPherson, Jr., Executive Secretary, 1110 West Main Street, Durham, N. C. 27 701.

June 13-16: American Association of Neuropathologists. Washington-Hilton, Washington. Address: Dr. Stanley M. Aronson, Secretary-Treasurer, Downstate Medical Center, Brooklyn, N. Y. 11203.

June 16-20: American Medical Association. San Francisco. Address: Dr. F. J. L. Blasingame, Executive Vice President, 535 North Dearborn Street, Chicago, Ill. 60610.

June 17-19: American Neurological Association. Washington-Hilton, Washington. Address: Dr. Melvin D. Yahr, Secretary-Treasurer, 710 West 168th Street, New York, N. Y. 10032.

June 18-19: American Medical Women's Association (Interim Meeting). Waldorf Astoria Hotel, New York. Address: Miss Gertrude F. Conroy, Executive Director, 1740 Broadway, New York, N. Y. 10019.

June 23-28: American Institute of Homeopathy. Sheraton-Park Hotel, Washington. Address: Dr. Wyrth Post Baker, President, 1635 Harvard Street, N.W., Washington, D. C. 20009.

June 23-28: Educational Conference in Environmental Health. Sheraton-Park Hotel, Washington. Address: National Association of Sanitarians, 1550 Lincoln Street, Denver, Colo. 80203.

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TO SHARE: Internist at 2141 K Street, N.W., desires young physician to share offices in beautiful new building. Reception room furnished. Private consultation and examining rooms. Mutual covering of practice desired. Monthly rental includes receptionist to answer telephone. For further information telephone 296-4897.

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TO SHARE: Well established OB-GYN wishes to share offices at 1801 Eye Street, N.W. Very flexible arrangements possible and quite reasonable. Address Box 67, 2007 Eye Street, N.W., Washington, D. C. 20006.

FOR RENT: NEW MEDICAL BUILDING, 1726 Eye Street, N.W.: Ideal office space for GP or specialist. Suite for dentist also available. All utilities included plus switchboard and char service; centrally air-conditioned. Parking available. Telephone 298-6936.

FOR RENT: RICHARDS PROFESSIONAL BUILDING, 1407 Forest Drive, Annapolis, Md.: air-conditioned offices for physicians. Telephone RICHARDS REALTY COMPANY (Washington) 932-8140; (Baltimore) 974-0932; (Annapolis) 301-267-7165 or 7973.

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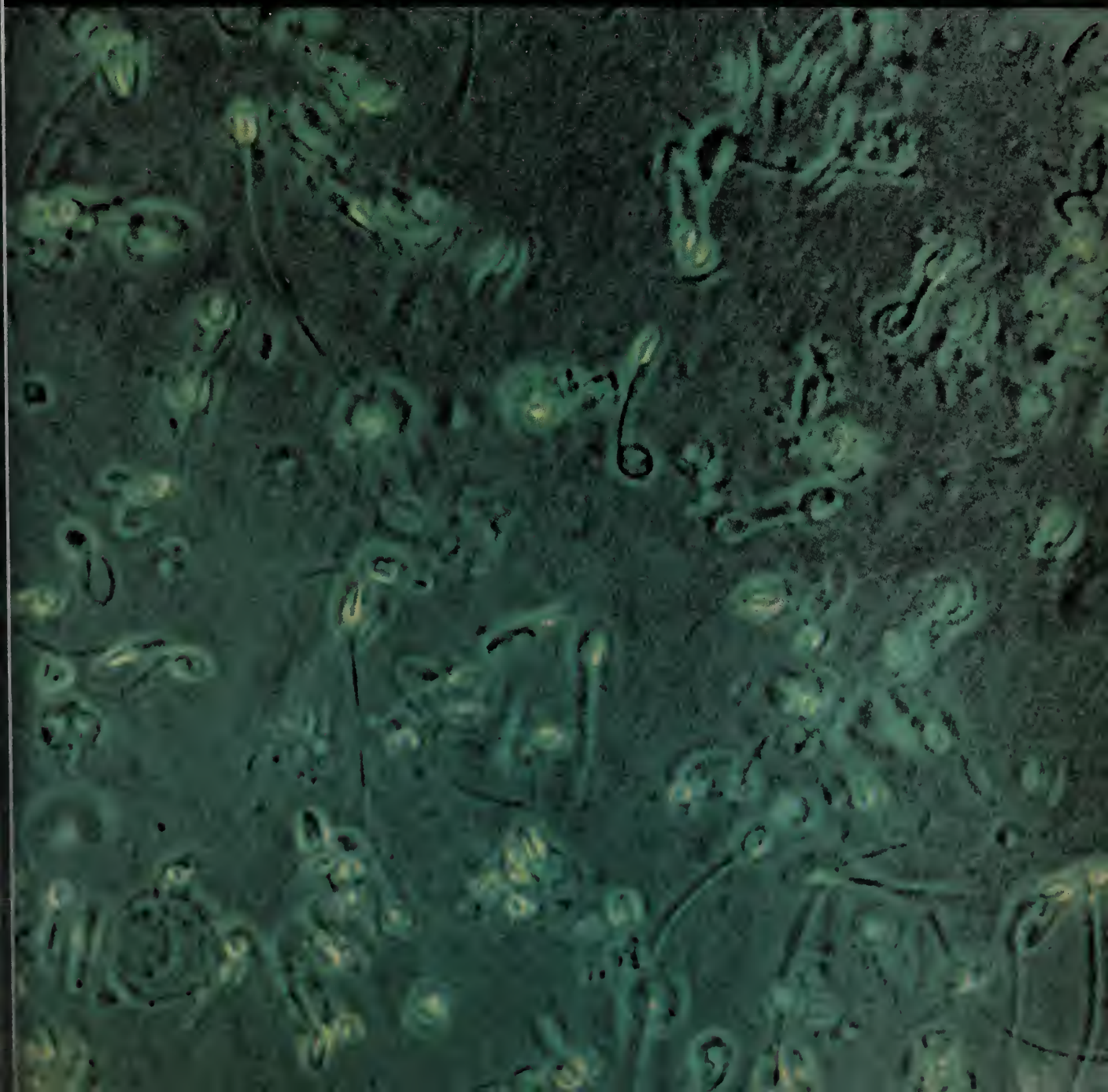
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New York State JI. of Med.

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Illinois Med. JI.
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When the talk turns to oral contraceptives, it makes medical sense to remember low-dose Norinyl-1.

(norethindrone 1mg $\bar{c}$ mestranol 0.05mg)

Turn page for contraindications, precautions and side effects.



Reduction of oral contraceptive dosage to the lowest effective levels is a well-accepted principle of conservative medical practice. In keeping with this view, Norinyl is now also available as Norinyl-1, containing exactly one half the previous dosage of norethindrone and mestranol. Clinical experience has established that effective fertility control can be achieved with the same degree of reliability and safety with new Norinyl-1 when taken as directed.

What about switching patients from higher dosage forms?

In transferring patients to low-dose Norinyl-1 from higher-dosage oral contraceptives, some breakthrough bleeding may occur in the early cycles. In the majority of cases the bleeding episode is mild and self-limited. The long-term advantages of the lower dosage form should be weighed against the inconvenience of possible breakthrough bleeding in the individual patient.

Contraindications: 1. Patients with thrombophlebitis or with a history of thrombophlebitis or pulmonary embolism. 2. Liver dysfunction or disease. 3. Patients with known or suspected carcinoma of the breast or genital organs. 4. Undiagnosed vaginal bleeding.

Warnings: 1. Discontinue medication pending examination if there is sudden partial or complete loss of vision or if there is a sudden onset of proptosis, diplopia or migraine. If examination reveals papilledema or retinal vascular lesions, medication should be withdrawn. 2. Since the safety of NORINYL-1 (norethindrone 1 mg. with mestranol 0.05 mg.) in pregnancy has not been demonstrated, it is recommended that for any patient who has missed two consecutive periods, pregnancy should be ruled out before continuing the contraceptive regimen. If the patient has not adhered to the prescribed schedule, the possibility of pregnancy should be considered at the time of the first missed period. 3. Detectable amounts of the active ingredients in oral contraceptives have been identified in the milk of mothers receiving these drugs. The significance of this dose to the infant has not been determined.

Precautions: 1. The pretreatment physical examination should include special reference to breast and pelvic organs, as well as a Papanicolaou smear. 2. Endocrine and possibly liver function tests may be affected by treatment with NORINYL-1. Therefore, if such tests are abnormal in a patient taking NORINYL-1 it is recommended that they be repeated after the drug has been withdrawn for two months. 3. Under the influence of estrogen-progestogen preparations, preexisting uterine fibromyomata may increase in size. 4. Because these agents may cause some degree of fluid retention, conditions that may be influenced by this factor, such as epilepsy, migraine, asthma, cardiac or renal dysfunction, require careful observation. 5. NORINYL-1 should be used with caution in patients with a history of cerebrovascular accident. 6. In relation to breakthrough bleeding, and as in all cases of irregular bleeding *per vaginam*, nonfunctional causes should be borne in mind. In cases of undiagnosed vaginal bleeding, adequate diagnostic measures are indicated. 7. Patients with a history of psychic depression should be carefully observed and the drug discontinued if the depression recurs to a serious degree. 8. Any possible influence of prolonged NORINYL-1 therapy on pituitary, ovarian, adrenal, hepatic or uterine function awaits further study. 9. A decrease in glucose tolerance has been observed in a small percentage of patients on oral contraceptives. The mechanism of this decrease is obscure. For this reason, diabetic patients should be carefully observed while receiving NORINYL-1 therapy.

10. Because of the occasional occurrence of thrombophlebitis and pulmonary embolism in patients taking oral contraceptives, the physician should be alert to the earliest manifestations of the disease. 11. Because of the effects of estrogens on epiphyseal closure, NORINYL-1 should be used judiciously in young patients in whom bone growth is not complete. 12. The age of the patient constitutes no absolute limiting factor, although treatment with NORINYL-1 may mask the onset of the climacteric. 13. The pathologist should be advised of NORINYL-1 therapy when relevant specimens are submitted.

Side effects observed in patients receiving oral contraceptives: The following adverse reactions have been observed in patients receiving oral contraceptives: nausea, vomiting, gastrointestinal symptoms (such as abdominal cramps and bloating), breakthrough bleeding, spotting, change in menstrual flow, amenorrhea, edema, chloasma or melasma, breast changes (tenderness, enlargement and secretion), change in weight (increase or decrease), changes in cervical erosion and cervical secretion, suppression of lactation when given immediately postpartum, cholestatic jaundice, migraine, rash (allergic), rise in blood pressure in susceptible individuals, mental depression.

Although the following side effects have been reported in users of oral contraceptives, no cause and effect relationship has been established: anovulation post-treatment, premenstrual-like syndrome, change in libido, changes in appetite, cystitis like syndrome, headache, nervousness, dizziness, fatigue, backache, hirsutism, loss of scalp hair, erythema multiforme, erythema nodosum, hemorrhagic eruption, itching.

The following occurrences have been observed in users of oral contraceptives (a cause and effect relationship has been neither established nor disproved): thrombophlebitis, pulmonary embolism, neuro-ocular lesions.

The following laboratory results may be altered by the use of oral contraceptives: increased sulfo-bromophthalein and other hepatic function tests, coagulation tests (increase in prothrombin, Factors VII, VIII, IX and X), thyroid function (increase in PBI and butanol extractable protein-bound iodine and decrease in T^3 values), metyrapone test, pregnanediol determination.

norethindrone — an original steroid from

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Here's why Norinyl-1 makes medical sense.

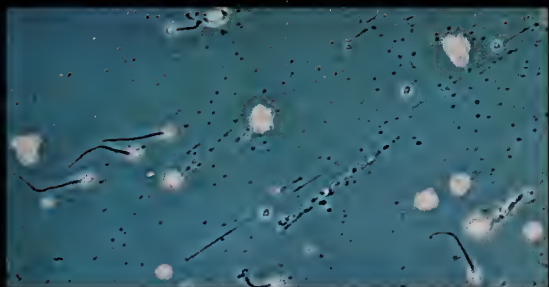
The effectiveness of Norinyl-1 as a low-dose oral contraceptive may be explained by its possible multiple action. In addition to its primary action of suppression of ovulation, Norinyl-1 may offer additional protective mechanisms... (1) creation of a cervical mucus that may be hostile to sperm penetration, and (2) development of an endometrium that may be out of phase with nidation.

These effects are illustrated below.

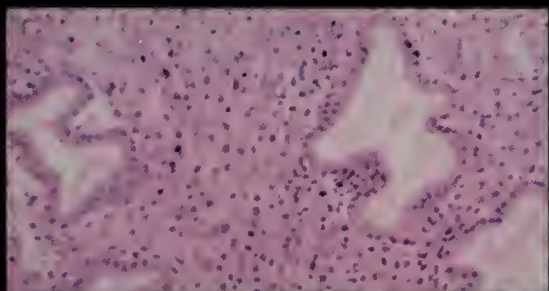
Untreated Patient



Cervical mucus at midcycle is usually thin and watery, with Spinnbarkeit (stretchability) of 15 to 20 cm.



Spermatozoa appear healthy, active, freemoving.

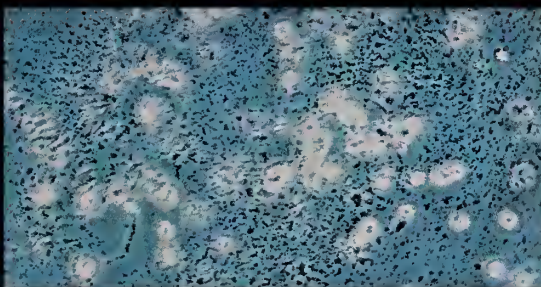


Endometrium of untreated patient is receptive to the fertilized ovum during secretory phase.

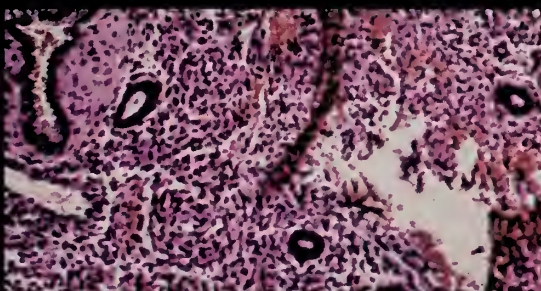
Norinyl-1 Patient



Cervical mucus at midcycle is scanty, viscous—with Spinnbarkeit of 1 cm. or less.



Immobile spermatozoa as they appear in cervical mucus taken from patient treated with Norinyl-1.



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Indications: Hypertension and many types of edema involving retention of salt and water.

Contraindications: Hypersensitivity and most cases of severe renal or hepatic disease.

Warning: With the administration of enteric-coated potassium supplements, which should be used only when adequate dietary supplementation is not practical, the possibility of small bowel lesions (obstruction, hemorrhage, and per-

foration) should be kept in mind. Surgery for these lesions has frequently been required and deaths have occurred. Discontinue enteric-coated potassium supplements immediately if abdominal pain, distention, nausea, vomiting, or gastrointestinal bleeding occur. Use with caution in pregnant patients, since the drug may cross the placental barrier and adverse reactions which may occur in the adult (thrombocytopenia, hyoerbilirubine-

mia, altered carbohydrate metabolism, etc.) are potential problems in the newborn.

Precautions: Antihypertensive therapy with Hygroton should always be initiated cautiously in postsympathectomy patients and in patients receiving ganglionic blocking agents or other potent antihypertensive drugs, or curare. Reduce dosage of concomitant antihypertensive agents by at least one-half. Barbiturates, narcotics or alcohol

may potentiate hypotension. Because of the possibility of progression of renal damage, periodic determination of the BUN is indicated. Discontinue if the BUN rises or liver dysfunction is aggravated. Hepatic coma may be precipitated. Electrolyte imbalance, sodium and/or potassium depletion may occur. If potassium depletion should occur during therapy, Hygroton should be discontinued and potassium supplements given, provided the



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patient does not have marked oliguria.

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tension, aplastic anemia, leukopenia, thrombocytopenia, agranulocytosis, impotence, dysuria, transient myopia, skin rashes, urticaria, purpura, necrotizing angitis, acute gout, and pancreatitis when epigastric pain or unexplained G.I. symptoms develop after prolonged administration. Other reactions reported with this class of compounds include: jaundice, xanthopsia, paresthesia, and photosensitization. **Average Dosage:** 50 or 100 mg. with

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Contraindications: This product is contraindicated in those individuals who have shown hypersensitivity to any of its components.

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Contraindications: Patients with known hypersensitivity to the drug.

Warnings: Caution patients about possible combined effects with alcohol and other CNS depressants. As with all CNS-acting drugs, caution patients against hazardous occupations requiring complete mental alertness (e.g., operating machinery, driving). Though physical and psychological dependence have rarely been reported on recommended doses, use caution in administering to addiction-prone individuals or those who might increase dosage; withdrawal symptoms (including convulsions), following discontinuation of the drug and similar to those seen with barbiturates, have been reported. Use of any drug in pregnancy, lactation, or in women of childbearing age requires that its potential benefits be weighed against its possible hazards.

Precautions: In the elderly and debilitated, and in children over six, limit to smallest effective dosage (initially 10 mg or less per day) to preclude

ataxia or oversedation, increasing gradually as needed and tolerated. Not recommended in children under six. Though generally not recommended, if combination therapy with other psychotropics seems indicated, carefully consider individual pharmacologic effects, particularly in use of potentiating drugs such as MAO inhibitors and phenothiazines. Observe usual precautions in presence of impaired renal or hepatic function. Paradoxical reactions (e.g., excitement, stimulation and acute rage) have been reported in psychiatric patients and hyperactive aggressive children. Employ usual precautions in treatment of anxiety states with evidence of impending depression; suicidal tendencies may be present and protective measures necessary. Variable effects on blood coagulation have been reported very rarely in patients receiving the drug and oral anticoagulants; causal relationship has not been established clinically.

Adverse Reactions: Drowsiness, ataxia and confusion may occur, especially in the elderly and debilitated. These are reversible in most instances by proper dosage adjustment, but are also occasionally observed at the lower dosage ranges. In a few instances syncope has been reported. Also encountered are isolated instances of skin eruptions, edema,

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June
1968



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M.D., AND J. B. BRADY, M.D.

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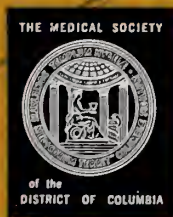
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Annual Scientific Assembly

WASHINGTON HILTON HOTEL
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References:

- (1) Siver, R. H.: CMD, 21:109, September 1954. (2) Frykman, H. H.: Minn. Med., 38:19-27, January 1955. (3) McGivney, J.: Tex. State Jour. Med., 51:16-18, January 1955. (4) Quehl, T. M.: Jour. of Florida Acad. Gen. Prac., 15:15-16, October 1965. (5) Weekes, D. J.: N.Y. State Jour. Med., 58:2672-2673, August 1958. (6) Weekes, D. J.: EENT Digest, 25:47-59, December 1963. (7) Abbott, P. L.: Jour. Oral Surg., Anes., & Hosp. Dental Serv., 310-312, July 1961. (8) Rapoport, L. and Levine, W. I.: Oral Surg., Oral Med. & Oral Path., 20:591-593, November 1965.

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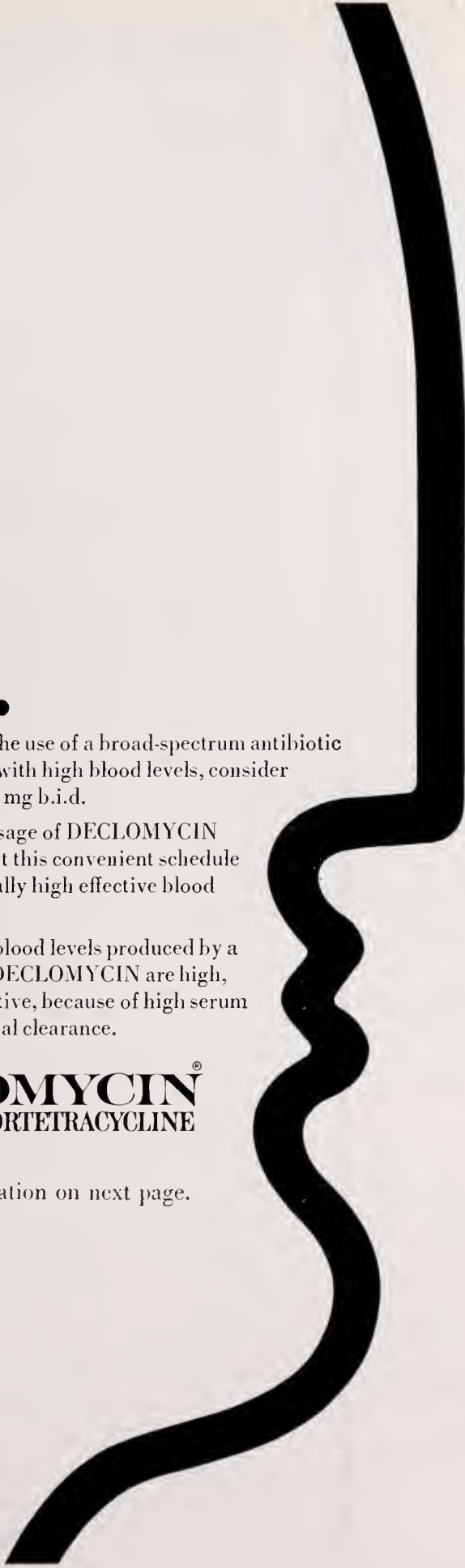
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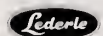
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Precautions—Overgrowth of nonsusceptible organisms may occur. Constant observation is essential. If new infections appear, appropriate measures should be taken. In infants, increased intracranial pressure with bulging fontanels has been observed. All signs and symptoms have disappeared rapidly upon cessation of treatment.

Side Effects—Gastrointestinal system—anorexia, nausea, vomiting, diarrhea, stomatitis, glossitis, enterocolitis, pruritus ani. Skin—maculopapular and erythematous rashes; a rare case of exfoliative dermatitis has been reported. Photosensitivity; onycholysis and discoloration of the nails (rare). Kidney—rise in BUN, apparently dose related. Transient increase in urinary output, sometimes accompanied by thirst (rare). Hypersensitivity reactions—urticaria, angioneurotic edema, anaphylaxis. Teeth—dental staining (yellow-brown) in children of mothers given this drug during the latter half of pregnancy, and in children given the drug during the neonatal period, infancy and early childhood. Enamel hypoplasia has been seen in a few children. If adverse reaction or idiosyncrasy occurs, discontinue medication and institute appropriate therapy.

Average Adult Daily Dosage: 150 mg q.i.d. or 300 mg b.i.d. Should be given 1 hour before or 2 hours after meals, since absorption is impaired by the concomitant administration of high calcium content drugs, foods and some dairy products. Treatment of streptococcal infections should continue for 10 days, even though symptoms have subsided.

In the treatment of syphilis a dosage schedule of a total of 12 to 18 Gm given in equally divided doses over a period of 10 to 15 days should be followed. Close follow-up observation of the patient is recommended, including appropriate laboratory tests, since demethylchlortetracycline has not had adequate evaluation in all stages of syphilis. Spinal fluid examination should be included as part of this follow-up.

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Complete blood and platelet counts should be done prior to and at regular intervals during treatment with the drug (see recommendations under "Important Note and Precautions") to help in the early detection of serious bone marrow injury. Abnormalities in initial blood tests should rule out use of the drug. Also, patients should be made aware of such early toxic signs of a potential hematologic problem as fever, sore throat, mouth ulcers, easy bruising and petechial or purpuric hemorrhage. Should such signs appear, the patient should be advised to discontinue the drug and to report to the physician immediately.

Indication Tegretol is indicated in the treatment of the pain associated with true trigeminal neuralgia. It is not a simple analgesic and should never be administered for relief of trivial facial aches or pains.

Contraindication Do not use in those with a known sensitivity to any tricyclic compound or in those being treated with M.A.O.I. agents. As long as a period as possible should elapse before using Tegretol in patients who have been treated with M.A.O.I.'s, with a minimum of 7 days. In such cases, initial dosage should be low and the patient's reaction to gradual increments closely observed.

Important Note and Precautions Familiarity with the clinical symptoms which lead to an accurate diagnosis of true trigeminal neuralgia and with the complete prescribing information, careful patient selection, a thorough examination before treatment and close patient supervision throughout the treatment period are essential to the safe and effective use of this drug.

Where feasible, Tegretol should not be used in conjunction with any potent drug which may increase the possibility of toxic reactions.

In pregnancy, the drug should not be prescribed during the first trimester and thereafter only to patients in whom the clinical situation warrants the potential risk. It should not be administered to nursing mothers.

Patients with increased intraocular pressure should be closely observed during treatment with this drug because of its anticholinergic effect. Because of the drug's relationship to other tricyclic compounds, the possibility of activation of latent psychosis and, in the elderly, of confusion or agitation, should be considered.

Dizziness and drowsiness may occur and patients should be cautioned about the hazards of operating machinery or automobiles and of engaging in other hazardous tasks.

Use cautiously in patients with a history of coronary artery disease, organic heart disease, congestive failure or liver disease.

Before initiating therapy, the following laboratory procedures should be performed:

1. Complete blood and platelet counts which, if abnormal, should rule out the use of the drug.
2. Baseline evaluations of liver function.

During treatment with Tegretol, the following laboratory procedures should be performed:

1. Complete blood and platelet counts should be done at intervals of one week during the first month of drug treatment, every two weeks during the second and third months, and at monthly intervals thereafter for as long as the patient is taking the drug. A trend toward a decreasing white blood cell count should suggest a dosage reduction and more frequent

laboratory and clinical evaluations. Should this trend continue, the drug should be discontinued.

2. Liver function tests must be performed at regular intervals during treatment with this drug since liver damage may occur during therapy. The drug should be discontinued immediately in cases of aggravated liver dysfunction or active liver disease.

3. Periodic eye examinations, including slit-lamp, funduscopy and tonometry, are recommended for patients being treated with this drug since many phenothiazines and related drugs have been shown to cause eye changes.

4. Complete urinalysis and BUN should be done on patients treated with Tegretol because of observed renal dysfunction.

Adverse Reactions Dizziness, drowsiness, unsteadiness on the feet, nausea, vomiting, aplastic anemia, transitory leukopenia, agranulocytosis, eosinophilia, leukocytosis, thrombocytopenia, purpura, abnormalities in liver function tests, cholestatic and hepatocellular jaundice, urinary frequency, acute urinary retention, oliguria with elevated blood pressure, albuminuria, glycosuria, elevated BUN, microscopic deposits in the urine, impotence, disturbances of coordination, confusion, headache, fatigue, blurred vision, transient diplopia and oculomotor disturbances, speech disturbances, abnormal involuntary movements, peripheral neuritis and paresthesias, depression with agitation, talkativeness, nystagmus, tinnitus, paralysis and other symptoms of cerebral arterial insufficiency, pruritic and erythematous rashes, urticaria, Stevens-Johnson syndrome, photosensitivity reactions, alterations in skin pigmentation, exfoliative dermatitis, alopecia, diaphoresis, recurrence of thrombophlebitis, erythema multiforme and nodosum, aggravation of disseminated lupus erythematosus, gastric distress, abdominal pain, diarrhea, constipation, anorexia, dryness of the mouth and pharynx, glossitis, stomatitis, fever, chills, adenopathy, lymphadenopathy, aching joints and muscles, leg cramps, conjunctivitis, left ventricular failure, aggravation of hypertension, hypotension, syncope and collapse, edema, aggravation of coronary artery disease and congestive heart failure. (Whether these cardiovascular effects are drug-related is not known. However, some of these complications have resulted in fatalities.) The necessity for discontinuing the drug should be dictated by the gravity and severity of the adverse reactions.

Dosage and Administration The drug should always be taken with meals, if possible.

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corticosteroids, ACTH, or digitalis. Salt restriction is not recommended. Use cautiously in patients with ulcerative colitis or gallstones (biliary colic may be precipitated). Bronchial asthma may occur in susceptible patients. **Adverse Reactions:** The drug is generally well tolerated. The most frequent side effects are nausea, gastric irritation, vomiting, diarrhea, constipation, muscle cramps, headache, dizziness and acute gout. Other potential side effects include angina pectoris, anxiety, depression, bradycardia and ectopic cardiac rhythms (especially when used with digitalis), drowsiness, dull sensorium, hyperglycemia and glycosuria, hyperuricemia, lassitude, restlessness, transient myopia, impotence or dysuria, orthostatic hypotension which may be potentiated when chlorthalidone is combined with alcohol, barbiturates or narcotics, leukopenia, aplastic anemia, skin rashes, thrombocytopenia, agranulocytosis, nasal stuffiness, increased gastric secretions, nightmare, purpura, urticaria, ecchymosis, weakness, uveitis, optic atrophy and glaucoma, and pruritus. Eruptions and/or flushing of the skin, a reversible paralysis agitans-like syndrome, blurred vision, conjunctival injection, increased susceptibility to colds, dyspnea, weight gain, decreased libido, dryness of the mouth, deafness, anorexia, and pancreatitis when epigastric pain or unexplained G.I. symptoms develop after prolonged administration. Jaundice, xanthopsia, paresthesia, photosensitization and necrotizing angitis are possible. **Average Dosage:** One tablet daily with breakfast. **Availability:** Pink, single-scored tablets in bottles of 100 and 1000. **For details, see complete Prescribing Information.** (B)46-600-B
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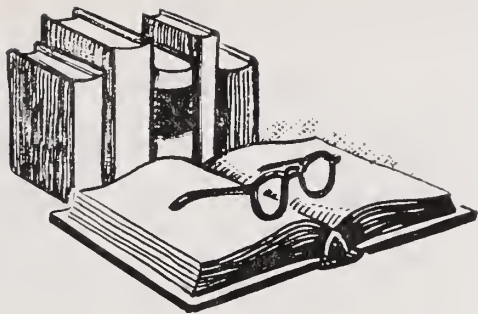
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Book Reviews

Symposium on Glaucoma. Transactions of the New Orleans Academy of Ophthalmology. M. F. ARMALY, M.D., B. BECKER, M.D., J. S. HAAS, M.D., P. C. KRONFELD, M.D., I. P. POLLACK, M.D., R. N. SHAFFER, M.D., AND L. E. ZIMMERMAN, M.D. Price, \$17.50. Pp. 306, with 120 figures. St. Louis: Mosby, 1967.

The Symposium on Glaucoma, held in New Orleans, February 27 to March 4, 1966, is reported in 287 pages. The first 186 pages are devoted to formal presentations by the 7 members of the panel as follows:

1. The Histology and Pathology of the Outflow Channels—Dr. Lorenz E. Zimmerman of the Armed Forces Institute of Pathology, Washington, D. C.
2. Diagnosis of the Glaucomas—Dr. Irwin P. Pollack
3. The Optic Nerve—Dr. Peter C. Kronfeld
4. Steroids and Glaucoma—Dr. Manson F. Armary
5. The Miotics—Dr. Robert N. Shaffer
6. Topical Epinephrine—Dr. Bernard Becker
7. The Use of Hyperosmotic Agents—Dr. Bernard Becker

8. The Surgical Treatment of Open Angle Glaucoma—Dr. Joseph S. Haas

The papers are all lucidly written and beautifully printed. A minor criticism is that 90 pages (one half of the formal presentations) concern topic 4, the steroids and glaucoma, whereas only 60 pages (one-third of this section) are given to topics 5 through 8, the treatment of glaucoma.

The last 100 pages are devoted to a panel discussion on glaucoma from questions submitted by the audience.

ROBERT DAY, M.D.

Corneal and Scleral Contact Lenses. Proceedings of the International Congress sponsored by the Department of Ophthalmology, Baylor University College of Medicine, and The Eyes of Texas, Inc., Sight Foundation, March 20-24, 1966. LOUIS J. GIRARD, M.D., Editor; JOSEPH W. SOPER, Associate Editor; AND CARLEEN GUNN, Assistant Editor. Price, \$29.50. Pp. 512, with 182 figures and 7 color plates. St. Louis: Mosby, 1967.

In 1966 a symposium on contact lens fitting was held at Houston for the purpose of defining the various problems confronting ophthalmologists who fit contact lenses. The resulting textbook on contact lenses, which is a record of the symposium, is the most comprehensive and useful publication yet on the subject. It is

comforting to know that the problems one encounters in contact lens fitting are shared by others in the field. It is also encouraging to learn that new techniques are being used and new materials being explored which will greatly widen the application of contact lens wearing.

Several contributors point out the paradox of the ophthalmologist who does not fit contact lenses but does fit spectacle lenses. Certainly, one's medical training finds greater application in the treatment and supervision of people inserting a foreign body into their eyes than it does in the mere fitting of a spectacle lens. And yet the great amount of time required and the tediousness of the fitting process act as deterrents to the oculist, who is generally relieved to leave contact lens care and fitting to the technician or optometrist. They point out that there must be closer supervision of the technicians and greater general participation by the ophthalmologist in the care of contact lens patients.

Despite learned discussion, the action of the flush-fitting therapeutic scleral lens remains an enigma. Although the results are at times dramatic, it is obvious that those presenting material on therapeutic scleral lenses are acting as advocates and that not enough attention is being paid to negative results. It is also difficult to achieve controls in these studies, and until understanding of the action of the therapeutic lenses is achieved they will not gain widespread usage.

New developments which bear further investigation include fenestrated lenses and soft hydrophilic lenses.

Anyone fitting contact lenses will find a wealth of useful information in this book.

MERVIN H. ZIMMERMAN, M.D.

Laboratory Medicine: Hematology, 3rd ed. JOHN B. MIALE, M.D. Price, \$21.00. Pp. 1257, with 555 illustrations and 25 plates, including 10 in color. St. Louis: Mosby, 1967.

This is a voluminous book about the laboratory aspects of hematology, with enough historical and clinical background to put each subject into proper perspective. Clinical management is not within the scope of the book. The biophysical and chemical bases of hematological practice are covered quite thoroughly in 14 chapters. The appendix is devoted to methods in hematology, including common tests as well as more

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Book Reviews (Continued)

advanced procedures that are available only in research centers at this time.

The traditional table of contents is abbreviated into a single page listing only chapter headings, the contents of each chapter being outlined at the beginning of the chapter for greater ease of reference. Although amply illustrated, the fact that only 10 plates are in color (taken from a German text) makes it quite difficult to convey an accurate image of blood and bone marrow morphology. (The author's introductory remark about the exorbitant cost of color reproductions is noted.)

The task of revising a volume of this scope by a single author must be a most taxing one; nevertheless, the text appears to be quite up-to-date, including key references on each subject. This book should be most useful as a reference volume to physicians, pathologists, and researchers interested in the clinical and investigative aspects of hematology.

GARO S. MATOSSIAN, M.D.

Myotatic, Kinesthetic and Vestibular Mechanisms. Ciba Foundation Symposium. Edited by A. V. S. DERUECK AND JULIE KNIGHT. Price, \$13.50. Pp. 331, with 169 illustrations. Boston: Little, 1967.

The Ciba Foundation was founded in 1949 to promote international coöperation in medical and chemical research among scientists from all parts of the world. Every year the Foundation organizes symposia and study groups, all of which are published in book form. The meetings themselves take place in London, England. This book is the result of the third symposium designed to cover the various areas of sensory function. Twenty-six authorities from various countries met for an exchange of clinical and investigative data on myotatic, kinesthetic and vestibular mechanisms.

The first half of the Symposium includes findings on innervation of mammalian skeletal muscles, vibration and stretch reflex, problems of postural sway, and spinal cord and brain stem pathways afferent from joints. In the second half of the Symposium the fine structure, nervous pathways and clinical aspects of vestibular mechanisms are described.

Among the more important papers presented are those on ultrastructure of vestibular and end organs, functional aspects of vestibular structure, anatomical organization of cerebello-vestibulo-spinal pathways, vestibular influence on spinal reflex activity, new techniques for otoneurological diagnosis, and the role of water and electrolyte balance in Meniere's disease. Each of the papers is followed by a discussion.

In general, the papers are too basic to be of great interest to the clinician. An exception is the article, "Recent Advances in the Electronystagmographic Investigation of Vestibular and Other Disorders of Ocular Movement" by J. D. Hood. Here it is shown how

Book Reviews (Continued)

new methods of using the electronystagmograph help in the diagnosis of lesions of the central nervous system at different levels in the brain stem. The practical value of these findings is demonstrated. The paper by S. K. Bosher on the "Disturbance of Water and Electrolyte Balance and Its Possible Role in the Causation of Meniere's Disease" is of interest to the otolaryngologist. Here a clinicopathological study of a case of sudden perceptive deafness precipitated by renal failure treated by hemodialysis is reported and discussed. It seems clear that the clinical deafness, in the absence of any relevant abnormal findings in the brain stem, was attributable to labyrinthine changes and in particular degeneration of Corti's organ. It is concluded that alterations in the body fluid may play a part in the pathogenesis of Meniere's disease, as was suspected many years ago but later dismissed.

HEINZ H. E. SCHEIDEMANDEL, M.D.

Ciba Foundation Study Group No. 30: The Balkan Nephropathy. Edited by G. E. W. WOLSTENHOLME AND JULIE KNIGHT. Price, \$3.50. Pp. 123, with 29 illustrations. Boston: Little, 1967.

This monograph consists of the papers and commentary presented at a symposium held in May, 1967.

The Balkan nephropathy is a peculiar, chronic renal disease found in contiguous areas of Yugoslavia, Rumania and Bulgaria along the basin of the Danube. It occurs in rural villages but not in towns, and it spares villages at higher elevations while affecting nearby villages in the valley bottoms. The disease produces marked tubular damage, which leads eventually to death from uremia; it is not caused by pyelonephritis, and is not associated with hypertension, but is accompanied by xanthodermia. In the most severely affected villages the morbidity rate has ranged as high as 12 per cent with up to 75 per cent of households involved. Although the disease has been under heavy scrutiny for the past 12 years the etiology is still unclear.

The symposium papers deal with various etiologic studies and methods aimed at early detection and elucidation of the cause of the disease. Even though this problem is not one which an American physician is ever likely to encounter, the book carries the fascination of a mystery story as the scientists involved (and the reader) attempt to piece together the available clues to obtain a clear picture of the culprit in this case. Unfortunately, we must await further developments before we know the killer's identity.

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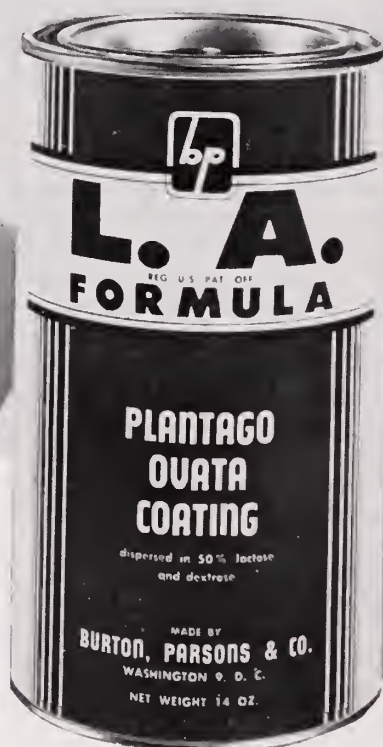


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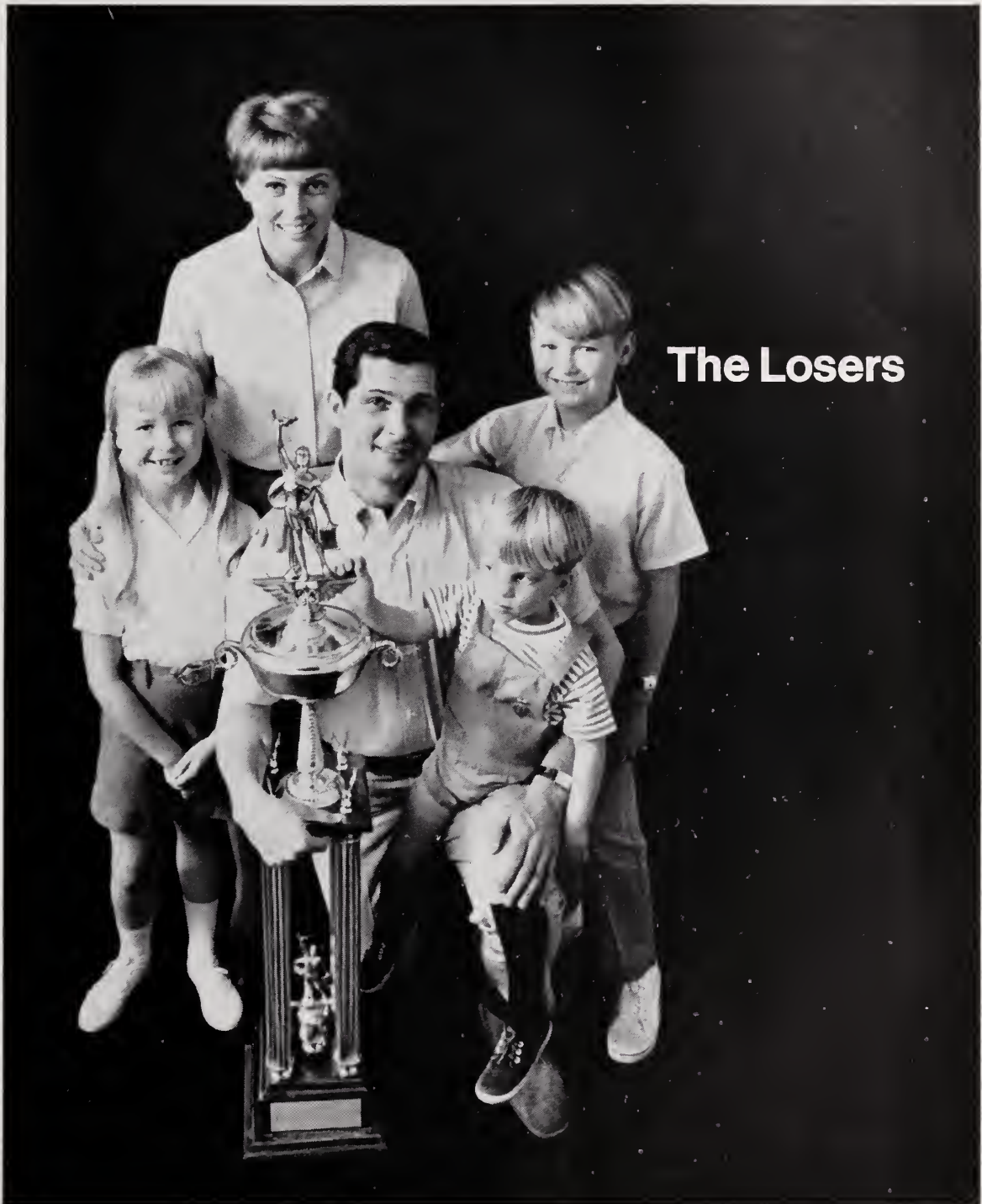


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Physiological Evaluation of SEALAB II*

DEEP SUBMERGENCE SYSTEMS PROJECT OFFICE, DEPARTMENT OF THE NAVY†

A UNIQUE OPPORTUNITY of observing man in a 7-atmosphere, helium-oxygen environment was provided by the U. S. Navy in the SEALAB II experiment during the fall of 1965.

Details of the physiologic monitoring of that experiment have now been released by the Navy. The areas reported are:

1. Respiratory functions
2. Hematology
3. Blood chemistry
4. Urinalysis
5. Urinary chemistry
6. Saliva
7. Electrocardiograph (EKG)
8. Blood pressure
9. Body temperature
10. Pulse
11. Gas uptake and elimination

During the SEALAB II experiment an underwater habitat was established on the ocean floor at a depth of 205 feet off La Jolla, California for 45 days, from late August to mid-October 1965.

Twenty-eight Navy men occupied the SEALAB habitat in 3 teams of 10 men, with each team down for 15 days. One man, Astronaut/Aquanaut M. Scott Carpenter, spent 30 consecutive days in the habitat and another man spent 15 days down with the first team and another 15 days with the second. The mean age of the participants was 35 years, with a range from 25 to 50 years.

During the SEALAB experiment samples of the habitat atmosphere and the aquanauts' blood, urine, saliva, and breath were analyzed on the surface support ship, as were the aquanauts' blood pressure, body temperature, and pulse.

* This is a news release based upon a report entitled, "Physiological Evaluation of SEALAB II: Effects of Two Weeks Exposure to an Undersea 7-atmosphere Helium-oxygen Environment," prepared in December 1966 by Raymond J. Hock, Ph.D., of Northrop Space Laboratories; Captain George F. Bond, MC, USN; and Captain Walter F. Mazzone, MSC.

† Address: Lt. Comdr. John Dewey, USN, Public Affairs Officer, DSSP, 6900 Wisconsin Avenue, Chevy Chase, Md. 20015.

Operational demands and work schedules made ideal physiologic sampling impossible, and statistical methods were also employed in the study. The aquanauts were divided into groups for specific kinds of data (e.g., hematologic) collected from each group; hence, the data collected were rarely inclusive of all the aquanauts. The conclusions of the physiologic monitoring, as described in the recently released report by Hock, Bond and Mazzone, follow.

(The day of exposure to SEALAB is used to combine all data for the men in the various teams. Thus, the day of descent is day 0, and day 1 means 1 full day of exposure. With the exception of Commander Carpenter, total consecutive exposure for all men was thus 15 days. The atmosphere in the SEALAB habitat was 3.5 to 5 per cent O₂, less than 18 per cent N₂, less than 0.4 per cent CO₂, and 77 to 79 per cent He; the temperature inside the habitat was maintained at between 85 and 89°F with a relative humidity of about 76 per cent.)

Oral temperature rose immediately on exposure to SEALAB and continued to rise for 4 days. Peak temperature reached at this time showed a mean of $100.0 \pm 0.08^\circ\text{F}$, a rise of 1.5°F from the baseline mean value. A slow decline appeared after this, but the temperature remained about 1°F above preexposure levels. Post-dive data showed rapid return to normal. The rise during occupation of the SEALAB habitat is highly significant statistically. This rise may be the result of higher heat loss because of the greater thermal conductance of helium with consequent greater heat production and new higher thermoregulatory setting.

Pulse rate increased during the dive period from a mean of 71.4 ± 2.4 pulse/minute, to 84.9 ± 2.7 on the second full day of exposure (day 2). A general trend downward followed, but rates remained higher throughout the exposure than baseline values. These determinations were made on nearly all the men. Heart rate, as counted from electrocardiographic (EKG) traces, showed a

slight decrease, marked on day 3. Only a small number of men were used for these heart rate determinations in contrast to the large number used for pulse rate. Thus, the discrepancy between results must be ascribed to the relative numbers of subjects and greater reliance placed on the pulse-rate determinations. Slight arrhythmias were found in some electrocardiograms.

Systolic pressure rose slightly until the fifth full day of exposure (day 5), when the mean was 133 mm. Hg compared to a baseline of 127. The diastolic pressure rose from 80 to 86 mm. Hg in the same period. Values remained relatively constant for the duration of exposure, with a slight trend down in systolic pressure. These results probably indicate a slight cardiovascular response to stress.

Electroencephalography showed slight transient changes during the stay on the ocean bottom. No changes of permanent nature were noted on post-dive examination.

Erythrocyte number during the dive decreased greatly from mean baseline values of 5.60 ± 0.22 million/mm.³ to 4.25 ± 0.13 on day 3. These low levels were maintained until day 9, after which a slow trend toward normal was manifest. These changes do not show statistical validity only because baseline and dive subjects were not always the same and small numbers of subjects were used. Additional time in SEALAB, as exemplified by the one man who spent 30 consecutive days there, did not cause further rise toward normal values. The observed decrease in RBC may be a result of slightly increased ambient pO₂. This change is conjectured as due to fluid balance shifts, sequestration of cells in the spleen or other vascular compartment, or actual increased rate of erythrolysis.

Total leukocyte count showed no consistent change. Neutrophils showed a slight steady decrease and a replacement of this number by a concomitant increase in lymphocytes. These changes may also be due to increased pO₂.

Hematoerit ratio changed relatively little when the original baseline is considered. However, a second baseline taken immediately before the dive showed a mean of 47.8 ml./100 ml., a fall to 45.6 on day 2, and a rise to 50.0 on day 13, with a post-dive value of 50.4. Hemodilution would explain the decreased values. It should be noted that the major decrease in erythrocyte count should normally be matched by a similar decrease in hematoerit. The fact that this did not occur points to a possible procedural error in the red blood cell count, or one of the other possibilities mentioned under the discussion for this parameter.

Hemoglobin level fell from baseline mean of 15.35 ± 0.15 Gm./100 ml. to low value of 13.0 ± 0.74 on day 3. It rose slightly for the duration of the SEALAB exposure and returned to higher than normal values immediately after the experiment. These changes may also be due to slightly increased pO₂.

Reticulocyte fall appears to indicate retarded erythropoiesis in the first days of exposure, followed by resumption of near-normal levels of cell production.

Platelet count increase was probably due to general stress. Sedimentation rate remained normal, although a slight decrease appeared evident.

Blood electrolyte changes included increases in serum sodium and potassium (on the basis of Horvath's figure immediately pre-dive). Calcium, chloride, and other measured parameters revealed no change. Serum CO₂ and other biochemical factors did not change in the aquanauts. The electrolyte changes may reflect blood pH changes, although data are not available to substantiate this hypothesis. The lack of change in blood gases indicates normal physiologic functioning in this respect in the SEALAB atmosphere.

Comparisons of exposure values with Horvath's baseline data taken immediately before the dive show a clear increase in serum glutamic oxaloacetic transaminase. Immediately on return to sea level normal values were resumed. Serum glutamic pyruvic transaminase also increased, as did lactic acid dehydrogenase. This general increase in all serum enzymes is probably a response to the multifactorial environmental stresses or, alternatively, to the increased exercise under difficult and unusual conditions.

Urine volume showed an initial increase, probably due to diuresis imposed by the cold water. However, the trend back to baseline may reveal poor urine collection methods. Specific gravity increased slightly throughout the experiment.

Urine sodium appears to have increased, as did calcium and potassium. Phosphorus and creatinine may also have increased, but the erratic swings in value may indicate procedural errors. Such changes as did occur reflect stress, exercise, and/or dehydration.

Imposed exercise studies revealed no decrement in performance with time of exposure, although subjective feelings of lassitude and fatigue were reported.

Swimming in cold water caused great reduction in extremity temperature and usually a slight rise in central body temperature. On reentering SEALAB, and especially following a hot shower, rectal

temperature fell markedly, presumably due to shunting of blood to the periphery due to vasodilation. This may in part explain the "paradoxical shivering" observed after the warming period.

Studies on erythropoiesis revealed no significant changes.

Maximal work capacity decreased after the dive. Increase in metabolic response to cold stress with loss of body heat also occurred, thus indicating increased cold tolerance.

Neurologic changes did not result from the SEALAB exposure, and psychophysiologic studies revealed no prolonged deleterious effects of the exposure.

In general, the changes that were apparent in the measured physiologic functions were of a mild, transitory nature. When postexposure data were taken, it was found that immediate return to pre-dive levels occurred. A few changes, among them body temperature and erythrocyte number, reflect greater and probably significant change.

The multiple stresses imposed by the environmental conditions which constitute the SEALAB exposure all have their potential effects on the physiologic responses. Elevated partial pressure of oxygen, high levels of exercise (and poor sleep?), high temperature and humidity, and swimming in cold water all appear to be implicated in the environmental factors operating to cause changes, either singly or in combination. The high helium content of the atmosphere does not seem to be implicated, except for its role in increasing heat loss through high thermal conductivity. High pressure per se does not appear to be directly implicated but may be part of the general stress.

Although the SEALAB II exposure appears from this analysis of data to have had relatively innocuous effects on the participants, extension of these findings to greater depths or for longer periods of time must be done with care. The great success of this program to date insures the validity of its basic concepts, and its operational extension will now depend on the further careful progress that has characterized it to date.

Similar physiological monitoring, conducted under vastly improved conditions, will be conducted at a depth of 620 feet off San Clemente Island, California, during the autumn of 1968. During SEALAB III 5 teams of 8 divers each will spend 12 days of living and working on the ocean floor. Personnel from several government agencies will join Navy aquanauts in this phase of the Navy's Man-in-the-Sea program. Captain George F. Bond, MC, U. S. Navy, will also serve as

principal investigator for the SEALAB III experiment.

National Center for Health Research

THE FEDERAL GOVERNMENT has established a new agency, the National Center for Health Services Research and Development, and appointed 2 new advisory committees in the health care field. The committees are:

1. The Medical Assistance Advisory Council that will advise the Secretary of Health, Education, and Welfare on matters relating to Federal-state medical aid programs.

2. A panel to give the Social Security Commissioner advice on experiments to find new methods of reimbursing hospitals and physicians for health care under Medicare and other Federal health programs.

The new center will work with universities, industry, hospitals, practitioners, and research institutions to seek new ways of delivering health care.

The immediate goals are:

- More efficient utilization of health personnel, including the development of new types of health workers at the professional, technical, and auxiliary levels.

- Increased productivity and better management of all elements of the medical care system to improve quality and moderate rapidly rising costs.

- Technological innovation, for immediate application, to achieve cost reduction and quality improvement.

- To survey and analyze health systems, including costs and financing, and to test new concepts and systems of health care delivery.

- To recruit, train and develop personnel for health services research, including the establishment of regional, non-Federal centers for health services research and training.

- Collection and correlation of existing information on health services delivery for planning and organization design.

- Initiation of systems' studies of institutional design, construction, equipment, and maintenance and support construction of cost-saving innovations.

Director of the center, which is under the newly created Health Services and Mental Health Administration, is Dr. Paul J. Sanazaro, who had directed education and medical care research for the Association of American Medical Colleges since 1962.

The Three Levels of Human Life and Death, the Presumed Location of the Soul, and Some of the Implications for the Social Problems of Abortion, Birth Control and Euthanasia

JOSEPH W. STILL, M.D., M.P.H.*

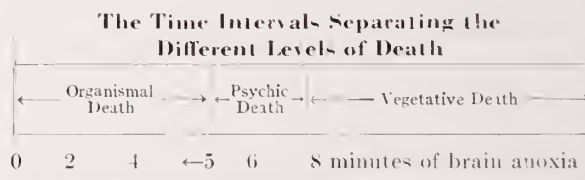
NO DOUBT it will surprise many readers to see a scientific journal publish an article which purports to deal with the subject of the human soul. But the fact is that existing scientific knowledge permits, in fact forces, those who believe in the existence of the human soul to contemplate these facts and study the soul from an entirely new point of view. Some may ask: Why should science try to force these people to take a new view of the soul? There is an adequate answer to that question which will soon become apparent.

In addition to the purely intellectual consideration which might not be a concern of science, there is the fact that there are 3 very important social problems—abortion, birth control, and euthanasia—which can be approached in an entirely different way as the result of approaching them from this new viewpoint. These are social problems which, in a democracy, will only find a solution when a large percentage of the general public has reached a consensus regarding each of them. Although these are social problems they also have their scientific aspects. So, since scientists are dedicated to the basic proposition that whenever possible decisions should be made on the basis of solid facts and sound logic, it seems reasonable to do what can be done to simplify the moral issue as well as to solve the medical and scientific problems. Therefore, without further comment let us proceed to demonstrate that there are 3 physically, anatomically, and temporally separate levels of life† and to discuss the

implications of these facts for the important social problems mentioned above.

Several years ago I had occasion to point out a mechanism whereby organismal aging and aging death could occur without having any cells of the organism undergo death.¹ In doing this a sharp distinction was made between organismal (or physiological) death and death due to chemical disorganization of the cells of the vegetative brain. Surprisingly, at that time I could find no scientific definitions of death anywhere. Subsequently it has become apparent that a third level of death—death of the cerebral cortex or psychic death—also can be sharply defined. Naturally, the 3 levels of death must each be the result of terminating the 3 related levels of life.

However, it is easier to distinguish these levels of life by first defining their absence, that is, identifying the 3 levels of death. These can be sharply distinguished from each other by means of the following simple chart:



Anatomic and Physicochemical Distinctions between the 3 Levels of Life and Death

Organismal death. This is characterized by the fact that, due to an electric shock, drowning, anesthesia, or certain other conditions, the heart and lungs stop functioning, the individual loses consciousness, and unless promptly resuscitated will in a matter of minutes be permanently dead. But if resuscitated within 5 minutes such an indi-

* Address: 11401 East Valley Blvd., El Monte, Calif. 91732.

† NOTE: My definition of life is that life is a dynamic state of organization which continues for long periods of time without human intervention, and that death is the disorganization of such a state of organization.

vidual can be fully revived without suffering any permanent physical damage. Obviously, the brain cells were not damaged by the brief period of anoxia. As is well established, such organismal death is due to a disruption of the nervous communications between the vegetative brain and heart and between the vegetative brain and the diaphragm and other muscles involved in breathing. Because no cellular damage is involved, such people recover completely without permanent physical damage of any kind.

Psychic death. If resuscitation is delayed longer, so that anoxia lasts from 5 to 8 minutes, it then is possible to restore the individual to organismal life but leaves that individual in a state of permanent coma. Of course, what has happened in such cases is that the cells of the cerebral cortex have been destroyed by the prolonged anoxia, thus ending all possibility of psychic life for that individual. Obviously, since organismal life has been restored, the cells of the vegetative brain had not been seriously damaged by the few minutes of anoxia.

Vegetative death. If anoxia persists beyond 8 minutes, the cells of the vegetative brain also die. Naturally, when that occurs, not even the purely vegetative form of organismal life is possible.

This brief recapitulation makes it apparent that there are 3 clearly and objectively distinguishable forms of death—organismal death due to physiologic disorganization, and 2 other forms which are due to chemical disorganization of brain cells. But the 2 latter types of cellular disorganization involve entirely different parts of the brain and occur at different points in time. To prove that these are different kinds of death and not mere stages of a single death process it is only necessary to point out that people who recover from organismal death often live on for years before their total death occurs. Also, vegetative death frequently occurs months and even years after psychic death has occurred. These facts make it evident that although these 3 forms of death usually occur in rapid sequence, they nevertheless are clearly distinguishable entities which can be objectively distinguished from each other.

Let us now turn our attention to the 3 corresponding levels of life. The first question that naturally arises is: Do the different levels of life begin at different times in embryological and fetal development?

It is not necessary to delve very deeply into embryology to become convinced that the 3 levels of life do in fact begin at different times.

As every student of embryology knows, an unfertilized egg has only half the total chromosomes normally found in the cells of the species. After fertilization occurs the cell begins to grow and soon multiplies to form 2, 4, 8, 16, etc. cells. Eventually, in an adult human being the total number of cells finally reaches an estimated total of from 30 to 50 trillion cells.

There seems to be good evidence that until the 16-cell stage is reached each of the earlier cells has the full potentialities of the original fertilized egg. This is based on the fact that quintuplets are supposedly the result of the cells at the 8-cell stage becoming separated to form 5, 6, 7, or 8 embryos. But since a uterus apparently is only large enough to accommodate no more than 5, the others almost always die.

Since undifferentiated cells are an indication that no form of specialization or cellular cooperation has yet begun, it therefore follows that organismal life has not yet begun. Though the matter can probably stand more investigation, it appears that cellular differentiation and specialization begin with the 16-cell stage in the development of the blastula. Certainly, by the time the blastula is ready to be transformed into the gastrula form, differentiation and intercellular coöperation have gone a long way and primitive endocrine controls are in operation. So it seems reasonable to conclude that at least a primitive form of organismal life has certainly begun by that time. But at the gastrula stage there still is no activity that suggests functions of the kind we ordinarily associate with psychic or vegetative life. Heart and vessels, lungs and nervous system have not yet reached a stage where they exhibit the kinds of activity which we normally associate with those organs.

The best evidence we have regarding the time when vegetative and possibly (?) psychic life begins is the fact that EEG and ECG waves have been obtained from 43- to 45-day embryos but not from younger ones. At this stage the heart begins to beat rhythmically and the brain has begun to form and produce EEG waves. Therefore, it seems clear that vegetative life begins on or before the age of 43 to 45 days. But what about psychic life?

Defining the exact time when psychic life begins seems more difficult. In fact, the exact anatomic boundaries which separate the vegetative from the cortical parts of the brain are not entirely clear. And, of course, there is the still more difficult question: When does the cortex begin to

store bits of information, and when does it begin to function and to store perceptions? There is considerable evidence that the storage of recallable experiences begins before birth.² On the other hand, self-consciousness, which appears to be the beginning of true human consciousness, does not occur until a child is several years old.

From this brief outline it is evident that considerable research is still required to determine the exact criteria for deciding exactly when each of the 3 levels of life has begun or ended. Similarly, there is an obvious need to develop sophisticated instruments and techniques for objectively sensing the information needed to make these determinations.

Discussion of Life, Death and Soul

I will not attempt to define the nature of the soul. Indeed, there already are so many different definitions that it would be difficult to frame a new one. Naturally, no effort will be made to deal with the question of whether or not a soul can survive the (psychic) death of the individual to whom it originally belonged. Nevertheless, these and other questions relate to a great many moral, ethical and religious beliefs held by millions of people. And these beliefs affect the attitudes of these people toward the social problems of abortion, birth control and euthanasia. Therefore, any information that can simplify the consideration of these important issues should be useful.

This paper makes it clear, beyond dispute I believe, that there are 3 different kinds of life and death. So far as we are aware, no one has ever claimed that a single body contains more than 1 soul. It certainly seems clear, therefore, that those who believe in a soul, regardless of how they define it or its properties, are obliged by the above facts to associate that soul with one of the 3 levels of life and death. Presumably, most believers would associate that one soul with psychic life and death. If this is correct, then we may fairly ask these questions:

1. Since a fertilized egg is only a single cell and so cannot yet have acquired any of the 3 levels of life outlined above, can it be logically credited with housing a human soul? If not, how does a birth control procedure which prevents such a cell from implanting in a uterus destroy a human soul?

2. If psychic life does not begin prior to the forty-third day of embryonic life, can it be logically argued that an abortion carried out prior to that day destroys a human soul?

3. If the cerebral cortex of an individual can be shown to be functionally dead, has not that indi-

vidual's soul left his body? If so, does this not place the question of euthanasia in an entirely different light than at present?

I do not raise these questions in order to answer them. Instead, they are raised in the belief that by relating them to the known scientifically demonstrable and researchable facts it will make it somewhat easier than at present for religious leaders to adjust their ethical and moral codes and to relate them to the known facts of life and death.

Furthermore, I believe that the clear-cut demonstration that there are 3 objectively distinguishable forms of death and of life can be useful in orienting further research directed toward the development of improved techniques for detecting the beginning and cessation of each of the 3 levels of life.

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Dental Patients Needed

THE COÖPERATION OF PHYSICIANS is requested in the referral of patients for a continuing study of Bechet's syndrome being conducted by the National Institute of Dental Research at the Clinical Center, National Institutes of Health, Bethesda, Md.

Needed are patients with oral ulcerative lesions and other characteristic manifestations, such as arthritis, ophthalmologic inflammation, erythema nodosum, erythema multiforme, brain stem, meningomyelitic or organic confusional syndromes, or significant gastrointestinal disease. Studies will include blood tests, electroencephalography and lumbar puncture.

Selected patients will be admitted to the Clinical Center for a period of 2 weeks or more. Upon completion of their studies patients will be returned to the referring physician, who will receive a summary of findings.

Physicians interested in having their patients considered for admission to this study may write or telephone Dr. Norman A. Cummings, Clinical Center, Room 2-B-10, National Institutes of Health, Bethesda, Md. 20014; telephone (301) 656-4000, Ext. 1363.

Acridine Orange Fluorescence Cytology in Office Practice

WILLIAM F. COLLITON, JR., M.D., F.A.C.O.G.,* JAMES S. STANTON, M.D., F.A.C.O.G.,†
AND JOHN B. BRADY, M.D., F.A.C.O.G.

IN VIEW of the varied and often diametrically opposed views expressed in the literature regarding the effectiveness of fluorescence cytology a brief historical account of its origin is in order. Approximately 25 years have passed since Papanicolaou introduced exfoliative cytology. Since this introduction, which many consider to be the most significant advance in the diagnosis and management of neoplastic disease, exfoliative cytology has undergone some refinements which have been greeted with various reactions. In 1950 Friedman¹ introduced fluorescence microscopy. In 1956 von Bertalanffy et al² reported their experience with acridine orange as the fluorochrome of choice. With a pH of 6 this technique emphasized the red-staining characteristics of the cytoplasm and nucleoli of abnormal cells. The difficulties produced in interpreting degrees of redness need no documentation to anyone who has tried to decorate a room with this color. The difficulties in reproducing the scientific results reported by von Bertalanffy have been described by Liu.³

Two years later Dart and Turner⁴ modified this technique by lowering the pH to 3.8 to reduce the binding of acridine orange with RNA (ribonucleic acid) and to emphasize the increased nuclear fluorescence of DNA (deoxyribonucleic acid) for screening. By 1962 Riva and Turner⁵ had presented the 10-second staining method. Using the degree of nuclear fluorescence for screening only, they stressed that the determination of abnormal changes and their severity are based strictly on morphologic criteria. It is in this technique that two of us (W. F. C. and J. S. S.) were trained in the spring of 1960. During 1961 and 1962 we did most of the cytoscreening for our practice. We yielded this responsibility only when we got behind because of busy hours or a heavy obstetri-

cal population at term. The third partner (J. B. B.) joined the practice and the utilization of this technique in January, 1963. When this occurred the same reasons demanded that all screening and diagnosis be done by a cytologic laboratory. All our material is sent to a laboratory which uses the Riva-Turner method exclusively. This paper is presented to report our experience, which has been most favorable.

Tables 1 and 2 summarize a portion of this experience. One fact stands out on even the most

TABLE 1: Incidence of Abnormal Smears
1963-1966

Year	No. of Cases	Class III or Above	Incidence (per cent)
1963	1,661	13	0.8
1964	1,908	9	0.5
1965	2,286	10	0.4
1966	2,425	8	0.3
TOTALS	8,280	40	avg. 0.48

casual glance, namely, the very low incidence of abnormal (Class III or above) smears. Two observations can be made on this fact. First, it should lay to rest the criticism that "too many false positive smears turn up with fluorescence cytology," and the follow-up of this, "You have to cone everybody." Others^{6,7} have confirmed the diminished need for conization when the 10-second A-O technique is used. The second observation is that this low incidence of suspicious smears is not surprising in view of the fact that approximately 92 per cent of these cases represent second smears from a sophisticated urban population that has been screened for cancer over a period of several years.

The 10-second staining technique utilized by Riva-Turner has been reported by others on several occasions and needs no repetition here. The advantages of this technique can be summarized as follows:

1. The rapid screening afforded by the fluorescent properties of the cells produces a speedier

* Clinical Instructor in Obstetrics and Gynecology, Georgetown University School of Medicine; offices: (Stanton, Colliton and Brady): 50 West Edmonston Drive, Rockville, Md. 20852.

† Clinical Assistant Professor of Obstetrics and Gynecology, Georgetown University School of Medicine.

report from the cytologist to the clinical investigator.

2. Because of the simplicity of the method the training time required for cytoscreeners has been reduced to one-sixth the previous training period required.⁸ This also advances any questionable material to the cytotechnologist and finally to the cytopathologist, all at an accelerated rate.

**TABLE 2: Diagnosis of Abnormal Smears
1963-1966**

Year	Class	No. of Cases	Diagnosis
1963	V	1	1 squamous-cell carcinoma
	IV	2	1 atypical squamous metaplasia 1 lost to follow-up
	III	10	1 in situ carcinoma
			1 papillary adenocarcinoma of uterus
			3 atypical squamous metaplasia
			3 "no malignancy" 2 repeat cytology negative
1964	IV	3	2 carcinoma in situ 1 adenocarcinoma of uterus
	III	6	2 squamous-cell carcinoma
			1 atypical metaplasia
			1 glandular hyperplasia endometrium
			1 "no malignancy" 1 lost to follow-up
1965	V	1	1 carcinoma in situ
	III	9	1 carcinoma in situ
			1 atypical squamous metaplasia
			1 chronic cervicitis
			6 repeat cytology negative
1966	IV	2	1 carcinoma in situ 1 atypical squamous metaplasia
	III	6	1 squamous-cell carcinoma
			1 carcinoma in situ
			1 chronic cervicitis
			2 repeat cytology negative 1 lost to follow-up

3. Trichomonas, fungi, and bacteria which stain red are easily picked up on the slides, and information regarding these types of infection can be forwarded to the attending physician together with information about abnormal cytology.

4. The morphology is more clearly demonstrated because the Riva-Turner technique utilizes a constant black background and the staining of the nuclear material is strictly on a quantitative chemical basis. It is thus impossible to over- or understain the slide. The cells illuminate themselves at a predictable rate for each slide.

5. No fixation is required.

6. In those selective instances in which a rapid report is highly desirable this technique cannot be matched for speed. When a clinical suspicion for malignant disease is high, when there is a young patient being followed after a diagnosis of carcinoma in situ, when the patient is extremely apprehensive, or when there is a symptomatic discharge which the clinician would like to diagnose accurately, a rapid report is easily obtained.

7. This method is economical.

8. The acridine orange stain does not combine with hemoglobin, and thus it is possible to take a smear during a normal menstrual period or if vaginal bleeding from any source is less than profuse.

Minor disadvantages of this technique are: (1) the loss of cells from the slide with repeated staining or examinations, (2) the slides may fade and require restaining for subsequent reevaluation, and (3) poorer visualization of the cytoplasmic detail.

Discussion

It is reported that approximately 12 to 15 million women have Papanicolaou smears done annually in the United States. The estimated adult female population is 75 million. Thus, approximately 20 per cent of the population at risk is currently being screened. Of this group, depending upon the nature of the population, between 0.8 and 2 per cent turn up with suspicious smears when they are in a population being repeatedly screened. In an area which is being investigated for the first time an incidence of 7 to 8 per cent suspicious (Class III or above) reports are to be expected. When one is told that 50 per cent of carcinoma of the cervix cannot be detected with the unaided human eye, the need for reaching a larger number of the female population is evident. The results produced by such an effort have been clearly demonstrated by several studies. A striking example is the investigation conducted by the National Cancer Institute and the University of Louisville School of Medicine.⁹ These investigators conducted a community-wide cervical cancer detection project in Jefferson County, Kentucky. They summarized their findings as follows: "A preliminary report of the results of screening a large population for cervical cancer shows an overall incidence of 2.8 per 1,000 women for previously undiagnosed invasive cervical cancer and 3.7 per 1,000 women for carcinoma in situ. The incidence in the third year of the screening of

those women with successively negative cell studies during the previous 2 years was 0.11 per 1,000 for invasive cervical cancer and 0.53 per 1,000 for carcinoma in situ." Thus the cervical cancer rate dropped from 0.65 per cent the first year to 0.064 per cent the third year, a 10-fold decrease.

Some of the approaches to the problem of reaching more women for Papanicolaou smear-screening which have been utilized are as follows: With the acridine orange technique there is need for fewer skilled cytotechnologists, there is more rapid training for cytoseekers, and the more rapid technique increases the volume output of those individuals who are trained to do it. Another approach has been the use of the do-it-yourself vaginal irrigation smear. Even those authors¹⁰ who are enthusiastic about this screening technique admit that in cases of carcinoma in situ where a 100 per cent diagnosis is anticipated by cervical scrape and staining, only 85 to 93 per cent are found with the vaginal irrigation. In cases of invasive carcinoma, once again 100 per cent should be diagnosed on cervical scrape, whereas with the irrigation technique the yield is 94 to 100 per cent. In cases of severe cervical dysplasia, which most would agree to be a precursor of carcinoma in situ, with the cervical scrape 93 to 100 per cent are diagnosed, whereas with the vaginal irrigation between 79 and 83 per cent is the yield. Others¹¹ investigating this technique had even less favorable results and concluded that this approach should be restricted to those populations which cannot be reached in any other way.

Still another approach suggested by Burns, Hammond, and Gorski¹² involves concentrating on the "high risk" population. They include in this all women with a Grade III or above smear on previous study and women over 35 years of age with abnormal bleeding, spotting, or discharge. These constitute approximately 14 to 15 per cent of the population at large. In the 7½-year study by these investigators they found an invasive carcinoma rate of 29.5 per 1,000 in the "high-risk" population as opposed to a 5.2 per 1,000 in the "low-risk" group. Reducing these figures to the yearly rate, the incidence is 3.9 per 1,000 per year in the "high-risk" group and 0.7 per 1,000 per year in the low-risk group. As a result of their study these authors concluded:

1. It is possible to identify a relatively small group of women who have a relatively high risk of developing invasive uterine cancer on the basis of

just 1 examination. They indicated the importance of an annual cytological study on these women to permit the diagnosis of cancer at an early curable stage.

2. "Pelvic examination together with a case history is of great value in the detection of uterine cancer. It is most unwise to depend solely upon cytology without benefit of a thorough medical examination."

The literature^{6, 7, 13} concerned with the use of the Riva-Turner method of fluorescence microscopy certainly validates its reliability in the hands of individuals thoroughly trained in its use.

Summary

Care must be taken in assessing the value of acridine orange fluorescence cytology from the literature. All authors^{4-8, 13} reporting on the use of the Riva-Turner 10-second technique had good results. Our experience was similar. In view of the fact that 80 per cent of the female population is still not benefiting from any screening technique for uterine cancer, consideration should be given to dissemination of the Riva-Turner approach which offers so many advantages.

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The Psychiatric Consultation in Private Practice*

PHILIP SOLOMON, M.D.†

THE TIME-HONORED, traditional "consultation" by physicians is well known to the public. It is a familiar, often dramatic event in movies, TV, novels, and paintings. Two doctors are usually shown, one young, intense, and worried, the other old, white-haired, and benign. The family is often in the background, perhaps grouped around the patient's bed, hushed and fearful. In psychiatry the consultation is not typically this way. Here is a characteristic instance:

Case 1. Dr. M, a medical practitioner, calls Dr. P, a psychiatrist. "I have a patient I would like you to see for me." He gives a brief history. "I have known Mrs. Kelly for years, since she was a baby. She is now 30 and has never had anything seriously wrong with her. She has been married 5 years and is pregnant for the first time. She decided she would like some help with some symptoms that have been bothering her for several years—'nutty things,' like being afraid she might kill someone or that she had already killed someone. She knows she hasn't and wouldn't, but when President Kennedy was assassinated she thought, 'What if I had done it?' If she reads of a big robbery in the paper, she thinks, 'What if I had done it while walking in my sleep?' Or, if she sees a knife, she might think, 'Wouldn't it be horrible if I stuck my husband with it?'"

An appointment is made. Dr. P sees the patient and calls up Dr. M. "I saw your Mrs. Kelly. She is a lovely girl and certainly has no mental disease. She does have a peculiar pesky neurosis, obsessional largely, which is not serious, but which can be extremely annoying to patients. This is definitely not the 'dyscontrol syndrome,' where there is a danger of violence. Here there is not the powerful urge toward violence but instead the fear that such an urge might occur, or had already occurred somehow and been acted on. Mrs. Kelly's personality is well integrated, her life thoroughly systematized (almost too much so), she has never actually stepped out of line in any way, and in her and in her family there is no history of epilepsy, migraine, serious misbehavior, or alcoholism.

"We don't really know too much about neuroses of this sort, why some people get them and others don't, even in the same family. Often they seem to be tied in

to the development of the emotional life and maturity of the individual. Mrs. Kelly was reared rather strictly. Her older brother is a priest, her younger brother was a choir boy, and she herself didn't go on dates until she was nearly 20.

"I would suggest that psychotherapy be tried for a time, but only after an EEG is done to rule out temporal lobe dysrhythmia as far as possible." Dr. M agrees and says he will arrange for the EEG and will explain the situation to the patient.

Note the 2 principles that have operated in this case. The welfare of the patient is of first importance. There is mutual respect and consideration between the medical practitioner and the psychiatrist.

Let us now consider the commonest ways in which these principles are breached, and let us look first at the sins of the non-psychiatrist physician. Here is an example of his not putting the welfare of the patient first:

Case 2. Dr. M to Dr. P: "Would you see old Mr. Jones for me? He is getting so senile now that I am afraid he will have to be put away. He is only 72 and not in bad shape—he had a mild coronary 2 years ago, but since his wife died after a long illness and malignancy 5 years ago he has gone steadily downhill. He lives with his son and daughter-in-law and is increasingly erotehety, absent-minded, unkempt, and disturbing to guests. He has been much worse since turning the business over to his sons. His daughter-in-law now finds him unbearable."

After not 1 but 3 interviews with the patient Dr. P calls Dr. M and says, "No, the patient is not senile, but depressed, bored, and angry. The condition is reversible and is best treated not in an institution but with medication, psychotherapy, family therapy, and occupational therapy." Dr. M listens politely and says he will discuss the situation with the family and let Dr. P know. Much later Dr. P learns that the patient was committed by another psychiatrist and that he subsequently succeeded in committing suicide in the institution.

Families sometimes persuade doctors to help them get rid of troublesome relatives, just as house officers in hospitals often desire "help" with patients that are hard to manage. In the better sanatoria some of the patients actually get better with good rehabilitative treatment. But some

* Read at the Annual Scientific Assembly of the Medical Society of the District of Columbia in Washington, D.C., November 22, 1967.

† Clinical Professor of Psychiatry, Harvard Medical School; Physician-in-Chief, Psychiatry Service, Boston City Hospital, 104 Lake Avenue, Newton Centre, Mass. 02159.

languish, miss their familiar surroundings, and give up. At times families have similar problems with adolescents, college students, and young adults. Not all mildly psychotic patients are best hospitalized. The medical practitioner and psychiatrist consultant must not permit themselves to be exploited for purposes not in the best interests of the patient.

Still considering the sins of the non-psychiatrist physician, here are some ways in which he can show improper respect and consideration for the psychiatrist. Dr. M may insist on an early appointment, urging emergency, when actually the condition may have existed for days and even weeks. Considering the nature of a psychiatrist's practice and its rigid dependency on time, fitting in an emergency patient can be very disruptive to the psychiatrist's schedule or to other patients whose appointments he may have to postpone to accommodate the consultation.

Dr. M may furnish an inadequate history. Yes, Dr. P will take his own history, but he does not have forever to do it. In order to conserve time and money Dr. M could help a lot if he told over the telephone or, better, wrote out the relevant present illness, past history (especially behavioral disorders), family history of mental illness, and current organic status. Consider the following:

Case 3. Dr. M referred a patient to Dr. P by way of the patient's family, and the patient arrived without a history. Dr. P was confused by the patient's "normality." Being then young and inexperienced, he made an attempt to talk with the relatives, but when he found that they were out of town he called Dr. M and said he could find nothing wrong with the patient.

"What about his ideas for a private religion, with himself as God? And of his making the family skimp and save money so he can buy himself a church?" Because the psychiatrist was Jewish and the patient Catholic, religion had hardly been touched on. Since then he has been a much more thorough psychiatrist, but he still has not forgiven the medical practitioner.

Sometimes doctors or relatives withhold data deliberately, alleging that they want an "unbiased" opinion. Such practice cannot be countenanced. An honest presentation of the facts should not prejudice anyone.

Now and then a psychiatrist is asked by the non-psychiatrist physician or by the family to examine a patient surreptitiously in a "social" setting, posing as a friend or as some other kind of specialist, for example, a neurologist. The intent is to get around a patient's unwillingness to be "psyched," or to comply with a parent's

attempt to shield a child from the "disgrace" of a psychiatric examination. Actually, it is surprising how much less resistance there is now to psychiatrists. Some young people even boast about their "shrink."

It is doubtful whether the deception and chicanery mentioned here are ever justifiable. Certainly it is often one sure way to vitiate the possibilities of treatment and to stir up real suspiciousness and antagonism in a patient with paranoid trends.

What about sins of the psychiatrist in consultation work? He also may err in not putting the patient's welfare first. He may permit himself to be unduly swayed by the desires and opinions of the relatives. Who speaks for the patient? Surely all doctors do, but maybe especially the psychiatrist, who should know the patient and his makeup most intimately. Yes, the psychiatrist, being human, may also be sorely tried by an ornery or hostile patient or a foolish one. But the experienced psychiatrist knows that the patient, if he is legally sane, has the right to be difficult and to do stupid things if he wants to (like squandering his money unwisely). If the patient is nasty, the psychiatrist will not retaliate. He will consider the patient's welfare from the patient's point of view, not from his own or the relatives' point of view.

The psychiatrist consultant can sin by showing improper consideration for the medical practitioner. He may fail to report back and not actually "consult" at all. Psychiatry is perhaps the one field where the specialist may not be very appreciative of the referral of a new case for treatment or consultation. Apt to be so very busy, and reluctant to lease another chunk of his personal life to a new patient, a psychiatrist may actually treat a request for consultation as an imposition and an intrusion. Thus a psychiatrist may "forget" to call the referring doctor, or to write a report.

The psychiatrist sometimes "steals" the patient. The mechanism behind the act may be the same as in the preceding paragraph, only worse. The non-psychiatrist physician may be quite willing, even eager, to do his own treatment, after consultation, with perhaps supervision by the psychiatrist. More non-psychiatrist physicians should do their own psychotherapy. There will never be enough psychiatrists. Some patients actually are far better treated by family doctors than they might be by psychologists, social workers, nurses, etc. (Not that these latter

(Continued on page 352)

Thyrotoxicosis and Periodic Paralysis

Report of a Case

JOHN L. TOWNSEND, M.D.,* JOHN A. ALGEE, M.D.,† AND W. LESTER HENRY, M.D., F.A.C.P.‡

THYROTOXICOSIS is known to be associated with 6 muscle disorders: thyrotoxic encephalopathy, chronic thyrotoxic myopathy, exophthalmic ophthalmoplegia, myasthenia gravis, periodic paralysis, and Basedow's paraplegia. Of these disorders, hypokalemia has been described only in periodic paralysis. There has been 1 case report of a potassium-losing nephropathy in a thyrotoxic patient in which there was no definite correlation between the serum potassium level and the attacks of paralysis.¹

It is the purpose of this paper to report a case of thyrotoxicosis with periodic paralysis with a review of the literature in reference to the pathogenesis of this disorder.

Report of Case

This was the first District of Columbia General Hospital admission for J. E. M., an 18-year-old Negro who came to the Emergency Room on May 4, 1964 with a history of progressive weakness of his arms and legs of several hours' duration. He considered himself to be well until the night prior to admission when while dancing he noted weakness of his legs, came home earlier than usual, and had difficulty walking up the steps. In the morning he felt well until noon when he again became weak in his legs. After dinner he was unable to arise from his chair and developed progressive weakness of his trunk, arms, and neck. He had had a similar episode of weakness in August of 1963 while in a reformatory, when the weakness was confined to his legs and lasted only 3 to 4 hours. He had a second episode in November of 1963 and was unable to walk for 8 to 10 hours.

Other symptoms included increased appetite without weight gain, intolerance to heat, behavior problems, and nervousness.

The history was otherwise noncontributory. The family history was not significant with regard to

thyroid dysfunction. A grandmother had diabetes. There was no family history of periodic paralysis.

The youth was well-developed and weak. The pulse was 104 and regular, the blood pressure 202/65, and the respiratory rate 20. The thyroid gland was about 4 times normal size, smooth and nontender, with a bruit. The neck muscles were flaccid. The eyes presented no stare, lid lag, or proptosis. A grade 2/6 systolic ejection murmur was heard at the apex. The seventh cranial nerves exhibited bilateral weakness. There was marked muscular weakness in all 4 extremities, mostly in the proximal muscles. The patient was able to move his fingers and toes. Otherwise the physical examination was negative. A lumbar puncture on admission showed the opening pressure to be 190 and the closing pressure 170. The fluid was clear and colorless with 52 red blood cells and 6 white blood cells. The protein was 58 mg., the sugar 80 mg., and the chlorides 131 mg. Colloidal gold and serology were negative. The electrolytes from May 4, 1964 to September 22, 1965 are given in table 1.

TABLE: 1 Electrolyte Recordings by Dates

1964-1965	K mEq./L	Na mEq./L	Cl mEq./L	CO ₂ mEq./L
May 4, 1964.....	2.0	146	106	26
May 5.....	3.8	148	99	30
May 8.....	4.4	144	99	27
May 8.....	4.1	148	99	27
May 10.....	4.4	141	98	23
May 12.....	5.1	138	102	25
June 4.....	1.5	144	101	34
June 4.....	2.1	142	107	28
June 5.....	3.3	149	109	33
June 8.....	4.4	140	99	30
June 10.....	4.4	140	118	31
June 15.....	5.1	140	106	23
June 19.....	3.9	139	96	22
July 12.....	3.7	139	102	22
July 13.....	4.2	135	101	26
August 24, 1965.....	4.5	142	102	26
September 22, 1965.....	4.4	141	96	26

* Address: 1708 North East 52nd Street, Oklahoma City, Okla. 73111; formerly Assistant Professor of Medicine, Howard University College of Medicine.

† Clinical Instructor in Medicine, Howard University College of Medicine, Washington, D.C. 20001.

‡ Professor and Head, Department of Medicine, Howard University College of Medicine.

The patient was given 2 Gm. of KCl every 2 to 4 hours for 6 doses. Twenty-four hours after admission he was able to move all of his limbs and his neck and was able to walk. After 48 hours his paralysis had disappeared. The protein-bound iodine was 16.2 mcg., and a radioactive iodine uptake was 86 per cent.

Routine laboratory tests were negative or normal. In addition to the potassium supplementation the patient was started on propylthiouracil, 100 mg. every 8 hours, with symptomatic improvement of the thyrotoxicosis. On May 16, 1964, however, he left the hospital. He was readmitted to the neurological service on June 3, 1964. The morning prior to admission he had felt some stiffness of his leg muscles and had gradually developed weakness in his legs, arms, and neck. He denied any respiratory distress, dysarthria, or ocular muscle dysfunction.

The neck muscles were weak. The thyroid gland was still enlarged, and a bruit was present. The blood pressure was 200/80 and the pulse rate 84. There was bilateral seventh nerve weakness; flaccid paralysis of all extremities, worse in the legs; and generalized areflexia.

Routine laboratory tests were negative except for 2+ albumin in the urine. The electrolytes are shown in table 1.

The patient was given 2 Gm. of KCl every 2 hours and a low carbohydrate diet with orange and grape juices. He responded to this therapy and was transferred to the medical service where he subsequently left the ward again for no apparent reason. He was subsequently contacted and followed in the endocrine and surgical clinics and took his medications faithfully. A radioactive iodine uptake in February of 1965 was 33 per cent.

The patient was admitted to the surgical service on July 28, 1965. The blood pressure was 148/100 and the pulse rate 90. The thyroid gland was enlarged, but there was no bruit. The protein-bound iodine was 12.8 mcg. per cent. The white blood cell count was 2,400, the hematocrit 42, the serum alkaline phosphatase 8.6 Bodansky units, the serum calcium 9.4 mg., and the serum phosphorus 2.6 mg. Radioactive iodine uptake was 5 per cent. The patient was thought to be too toxic for surgery and was discharged on propylthiouracil, 150 mg. every 8 hours. He had no further symptoms of paralysis.

The last admission was August 24, 1965, when the patient was considered to be euthyroid. The hematocrit was 47 per cent, the white blood cell count 4,200, serum cholesterol 148 mg., and T_3 14.6 per cent (normal 10-14.3 per cent). The patient was prepared with propylthiouracil and Lugol's solution. On September 24, 1965, a 98 per cent thyroidectomy was performed. A pathologic diagnosis of retrogressed hyperplasia was made.

Discussion

The first case of periodic paralysis associated with thyrotoxicosis was reported in 1902 by Rosenfield. In a review of the literature Linder² in 1955 collected 35 cases and added 3 of his own. Recently Okinaka et al³ in an extensive study noted the occurrence of periodic paralysis in 119 of a total of 6,333 patients with hyperthyroidism

operated on in 3 large hospitals in Japan, an incidence of 1.9 per cent. There were 99 cases of periodic paralysis among 1,214 cases of hyperthyroidism in males and 20 cases of periodic paralysis among 5,119 cases of hyperthyroidism in females. The incidence of association was 8.2 per cent for male patients and 0.4 per cent in females.

A family history was noted in only 1 of the 119 patients. The age of onset is most common in the second and third decades. Most of the attacks of paralysis began at the onset of the symptoms of thyrotoxicosis (73 per cent). In most of the cases the paralytic attacks subsided after the thyrotoxicosis was in a state of remission.

The episodes of paralysis may be precipitated by trauma, emotional upset, high carbohydrate intake, extreme muscle exertion, or the use of epinephrine or thyroid extract. The attacks are most frequent in the winter months.

Body metabolism and chemistry have been studied during and following these attacks with varying results. There is a fall in serum potassium just before and during an attack, but episodes with normal or high K values have been reported. These cases, however, can now be explained in the light of the recognized cases of hyperkalemia periodic paralysis in which typical attacks are associated with high or normal K levels.⁴

Hypokalemia and muscle paralysis have been associated with periodic paralysis and also with primary aldosteronism. There is evidence that the attacks are related to carbohydrate metabolism.¹

Potassium ions are very important in maintaining the polarized state of muscle cells, and excitation results in movement of this ion and sodium across the cell membrane. In experimental animals the resting potential difference of a muscle fiber is 90 mv between 2 membrane surfaces. The intracellular K in concentration (k) and the extracellular concentration (K)_E, normally 160 mEq. and 4.5 mEq./L respectively, bear a constant relationship expressed in the equation:

$$EM^* = 61.5 \times \log \frac{(K)_i}{(K)_E} = 61.5 \times \log 35 = 90 \text{ mv}$$

Any cause for the reduction of (K)_E or increase in (K)_i will result in a state of hyperpolarization and, if the latter is great enough, will result in a loss of responsiveness to nerve stimulation, excitability, and contractility.

In studies conducted on patients with familial periodic paralysis the uptake of K by their muscle

* Membrane potential

cells is greater than normal after the administration of insulin, epinephrine, and glucose.⁴

Conn and his associates⁵ recently noted that the attacks were preceded by sodium retention and a sharp rise in urinary aldosterone and that recovery from the attack was associated with massive sodium diuresis. They consider sodium retention to be the main factor which sets in motion the events leading to paralysis. The sum of the intracellular cations may be the critical factor.¹

The exact influence of thyroid hormone in attacks of periodic paralysis is unclear. There is a heightened severity of attacks with development of hyperthyroidism in familial periodic paralysis. Recurrences of attacks with relapse of thyrotoxicosis in patients treated, aggravation of paralysis by thyroid administration, and occurrences of attacks during a completely euthyroid state after treatment with antithyroid drugs have been variously observed.¹

In our patient there was a definite relationship between the paralytic episodes and the serum potassium level. With potassium administration the patient became asymptomatic. After his thyrotoxicosis was in remission on antithyroid medication he was symptom-free and his serum potassium levels were normal in the absence of K supplementation. One of the unusual features of the patient's paralysis was the involvement of the facial muscles. Another unusual feature in this case is the presence of this disease in an American Negro. As indicated previously, the great majority of the cases with periodic paralysis have occurred in Orientals, but the patient in the case of Jackman et al⁴ was likewise a Negro.

Summary

A case of periodic paralysis occurring in a patient with thyrotoxicosis has been presented. Unusual features were involvement of the facial muscles and its occurrence in a Negro. A brief discussion of the literature was also given.

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Immunization Advisory Memoranda re Plague and Cholera

Plague. There have been a number of inquiries concerning the recent epidemic of plague in Indonesia. The increase in cases began in August 1967 and reached a peak in January and early February 1968. Vigorous efforts have resulted in a marked decrease in cases since that time. Focus of the disease was in 2 subdistricts of the Regency of Bojolali, on the island of Djawa (Java), some 400 miles from Djakarta. No cases have occurred in or near Djakarta itself, or other major seaports.

There is no reason for any change in travel plans because of the epidemic. Immunization against plague is *not* advised for tourists nor for other travelers unless their destination is the local rural area where infection is actually occurring.

Immunization against plague may not be required as a condition for entry by any country under the International Sanitary Regulations. Indonesia, through the World Health Organization, has formally denied imposing such a requirement.

Cholera. On Friday, April 19, WHO received official notification that Singapore is now an infected area for cholera. Information available thus far indicates only a single, confirmed case. The source of introduction to this area, which has been free of cholera since 1964, is presently unknown.

The occurrence of this single case or even several additional cases of cholera in Singapore poses no hazard to the health of Americans planning to visit that area. A valid International Certificate of Vaccination Against Cholera is now required, however, for entry to that country, and will be required for travelers proceeding to other countries from Singapore. All persons planning to visit Singapore in the near future, therefore, are urged to receive this immunization prior to departure. They will otherwise be subject to vaccination on entry to Singapore or entry to many other countries in the Far East and Middle East. The International Certificate of Vaccination Against Cholera does not become valid until 6 days after the injection is given. This delay should be taken into consideration in making plans.

Also on Friday, April 19, WHO received official notification of 4 confirmed cases of cholera and 486 suspected cases in West Pakistan. The illnesses had onsets between April 5 and April 17 in the city of Multan. This community is approximately 200 miles southwest of Lahore, and 500 miles northeast of Karachi. No cases

(Continued on page 352)

Arthritic Manifestations in Osteogenesis Imperfecta

Report of a Case

RUBEN PEREZ, M.D.*

OSTEOGENESIS IMPERFECTA (O.I.) is included among the diseases characterized by McKusick¹ as generalized "heritable diseases of connective tissue." In its fully manifested form it is characterized by the presence of blue sclerae, otosclerosis, and the occurrence of multiple fractures without cause or from trivial trauma.

The joints are typically excessively mobile,^{2, 3} and dislocations of joints are frequent.^{4, 5} Backache and leg pains as a result of nerve-root compression are also common.¹

This case report deals with a patient suffering from typical O.I. and who has been seen repeatedly because of pain in several joints, at times accompanied by swelling and on several occasions associated with effusions in the knee joints. These findings have not been described previously in this disease. Since there were no features in this patient to suggest that he was suffering from any of the commonly known forms of arthritis, a relationship between the arthritic manifestations and his primary disease is suggested.

Report of Case

K. D., a 47-year-old white man, known to have O.I., was seen for the first time by me in March of 1965 because of pain and swelling of the left knee. The pain had been present for several days and because of its severity the patient required the use of crutches. Several months before he had been seen by another physician for the same problem, and at that time he was treated by aspiration of the knee joint, local steroids, phenylbutazone, and bed rest, with gradual and complete recovery after several weeks. Since 1958 he had been suffering from recurrent bouts of pain and swelling in the ankle joints which were treated in a similar fashion. No sequelae were noticed following these attacks, although at one time he had involvement of the hips which resulted in slight impairment of motion. There was no history of morning stiffness,

subcutaneous nodules, involvement of the small joints of the hands and feet, urethral discharge, diarrhea, fever, chills, pulmonary tuberculosis, skin rashes or trauma to the left knee. The patient had been aware of having blue sclerae and prominent large rings around the cornea since childhood. Up to age 13 years he had 16 fractures in various bones but had had none since. The father and 5 paternal cousins had sustained numerous fractures. Several members of the family have blue sclerae.

The pertinent physical findings were those of O.I. The face was triangular in shape. The eyes showed blue sclerae and bilateral embryotoxon. Dentition was poor and the teeth had a bluish discoloration. There was increased A-P diameter of the chest and increased thoracic kyphosis, with scoliosis to the right. The lower extremities showed marked anterior bowing of the tibiae, and the feet appeared underdeveloped. There were no heart murmurs and no abdominal hernias. Examination of the joints revealed increased dorsiflexion of the fingers and wrists, diminished abduction at the hips, and weakness of the collateral ligaments of the knees with stable anterior and posterior cruciate ligaments. The left knee was swollen and tender, and a fluid wave was present, but there was no redness or increased heat grossly. There were no subcutaneous nodules, skin rashes, or tophi.

The patient was treated again with local steroids, phenylbutazone and rest, and his symptoms gradually disappeared. In May of 1967 he was seen again, this time with pain and swelling of the right knee. The knee was tender, and an effusion was present. Approximately 30 c.c. of yellow fluid was aspirated from this knee. At this time the hemoglobin was 15.6 Gm. with a hematocrit of 46 per cent; leukocytes numbered 9,200 with a normal differential, and the sedimentation rate was 19 mm. in 1 hour (Wintrobe method). The urine was normal without albumin or formed elements. The L.E. prep and latex fixation test were negative, and the serum uric acid was 3.5 mg. (modified Knock's method). The synovial fluid revealed a cell count of 7,000/mm.³ Ninety-eight per cent of these cells were large cells varying in size from 20 to 40 micra in their greater dimension. Their nuclei were large, varying in size from 15 to 30 micra in diameter and spherical to oblong in shape, with smudge chromatin and indistinct

* Clinical Instructor in Medicine, Georgetown University School of Medicine; office: 1150 Connecticut Avenue, Washington, D. C. 20036.

parachromatin. A nucleolus was visible in some. The cytoplasm was usually homogeneous, but a few cells had small dark granules. Large vacuoles were seen frequently. The cell borders were usually indistinct, many having pseudopodia (figure 1). The mucin clot and viscosity were poor; the fluid contained no crystals and the total protein was 1.5 Gm. per cent.

The X-ray films of the knees showed some spotty demineralization and minimal hypertrophic marginal spurring. There were no loose bodies of calcification of the cartilages. A chest X-ray film was negative.

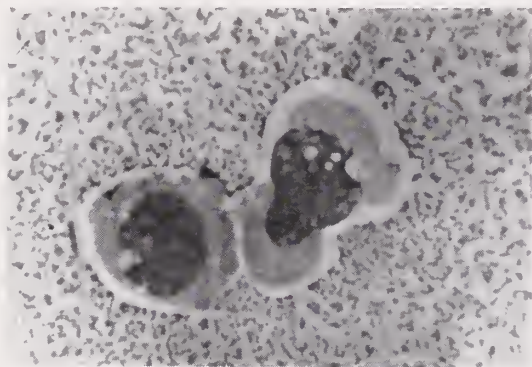


FIG. 1. Cells in synovial fluid.

Discussion

Clinically this patient has classic osteogenesis imperfecta. The articular manifestations presented here do not seem to fit into any currently recognized forms of arthritis. It is true that mild degenerative changes were described radiologically and that the collateral ligaments of both knees were weak; however, the synovial fluid findings were not those of a traumatic or degenerative arthritis. The presence of a poor mucin clot and poor viscosity point to the possibility of an inflammatory type of arthritis such as rheumatoid arthritis. The low total protein, the absence of leukocytosis, and the large number of the cells described in the synovial fluid would be distinctly unusual findings in rheumatoid arthritis.⁶ The morphology of these cells is that of the synovial lining cells, type A, described by Barland et al.⁷

The assumption that these episodes of arthritis are in fact related to his primary disease is not unreasonable. Schumacher⁸ in 1965 described 6 patients suffering from the Ehlers-Danlos syndrome who had acutely and chronically painful, swollen joints with effusion. In these cases extensive evaluation failed to show any other explanation for the musculoskeletal complaints. The Ehlers-Danlos syndrome is another of the diseases

characterized by McKusick as generalized "heritable diseases of connective tissue." In our present state of knowledge both the Ehlers-Danlos syndrome and osteogenesis imperfecta are the result of a defect in collagen formation.¹ It is therefore not unreasonable to assume that they may have similar articular manifestations.

Synovial lining cells are present in the normal synovial fluid, making up 4 per cent of the total cell count.⁶ The presence of such a large number of synovial lining cells as described here is an interesting finding and has not been described in any form of arthritis. I cannot offer a reasonable mechanism for the development of arthritis in osteogenesis imperfecta nor for the presence of the large number of synovial lining cells in the synovial fluid of this patient.

Summary

A middle-aged man with osteogenesis imperfecta has been suffering for years from recurrent bouts of pain and swelling of the joints of the lower extremities. Synovial fluid studies showed the presence of a large number of synovial lining cells. A relationship of the articular manifestations to his primary disease is suggested.

The author wishes to express his appreciation to Dr. Robert A. Dietrich for his interpretation of the synovial fluid cytology and to Drs. Nathan J. Zvaifler and Thomas J. Pekin for their advice and review of this paper.

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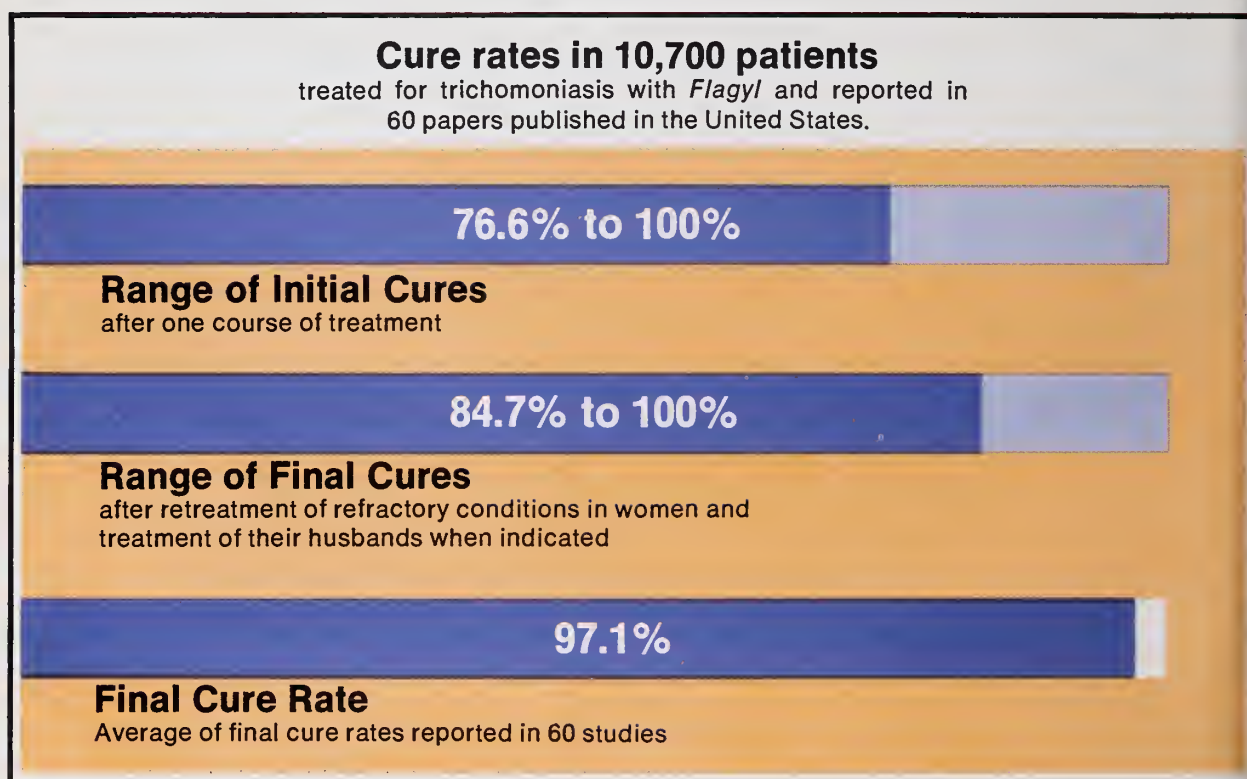
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Side Effects: Infrequent and minor side effects

include nausea, metallic taste and furry tongue. Gastrointestinal disturbances, flushing and headache sometimes occur, especially with concomitant ingestion of alcohol. The taste of alcoholic beverages may be altered. Other effects, all reported in an incidence of less than 1 per cent, are diarrhea, dizziness, vaginal dryness and burning, dry mouth, rash, urticaria, gastritis, drowsiness, insomnia, pruritus, sore tongue, darkened urine, anorexia, vomiting, epigastric distress, dysuria, depression, vertigo, incoordination, ataxia, ab-

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Sixty papers¹ published on the use of Flagyl in trichomoniasis in the United States and comprising a total of 10,700 patients have been evaluated. In thirty of the papers it was declared that all patients adequately followed and treated were free of trichomonal infection.

Analysis of all of these papers shows that the incidence of cures for the *initial* course of therapy ranged from 76.6 per cent to 100 per cent. The cure rates after retreatment of female patients and treatment of their husbands when indicated ranged from 84.7 to 100 per cent. The average final cure rate reported in all investigations was 97.1 per cent.

dominal cramping, constipation, stomatitis, numbness or paresthesia of an extremity, joint pains, confusion, irritability, weakness, cystitis, pelvic pressure, dyspareunia, fever, polyuria, incontinence, decreased libido, nasal congestion, proctitis and pyuria. Elimination of trichomonads may aggravate candidiasis.

Dosage and Administration: In women: one 250-mg. oral tablet three times daily for ten days. A vaginal insert of 500 mg. is available for local therapy when desired. When used, one vaginal

insert should be placed high in the vaginal vault each day for ten days; concurrently two oral tablets should be taken daily.

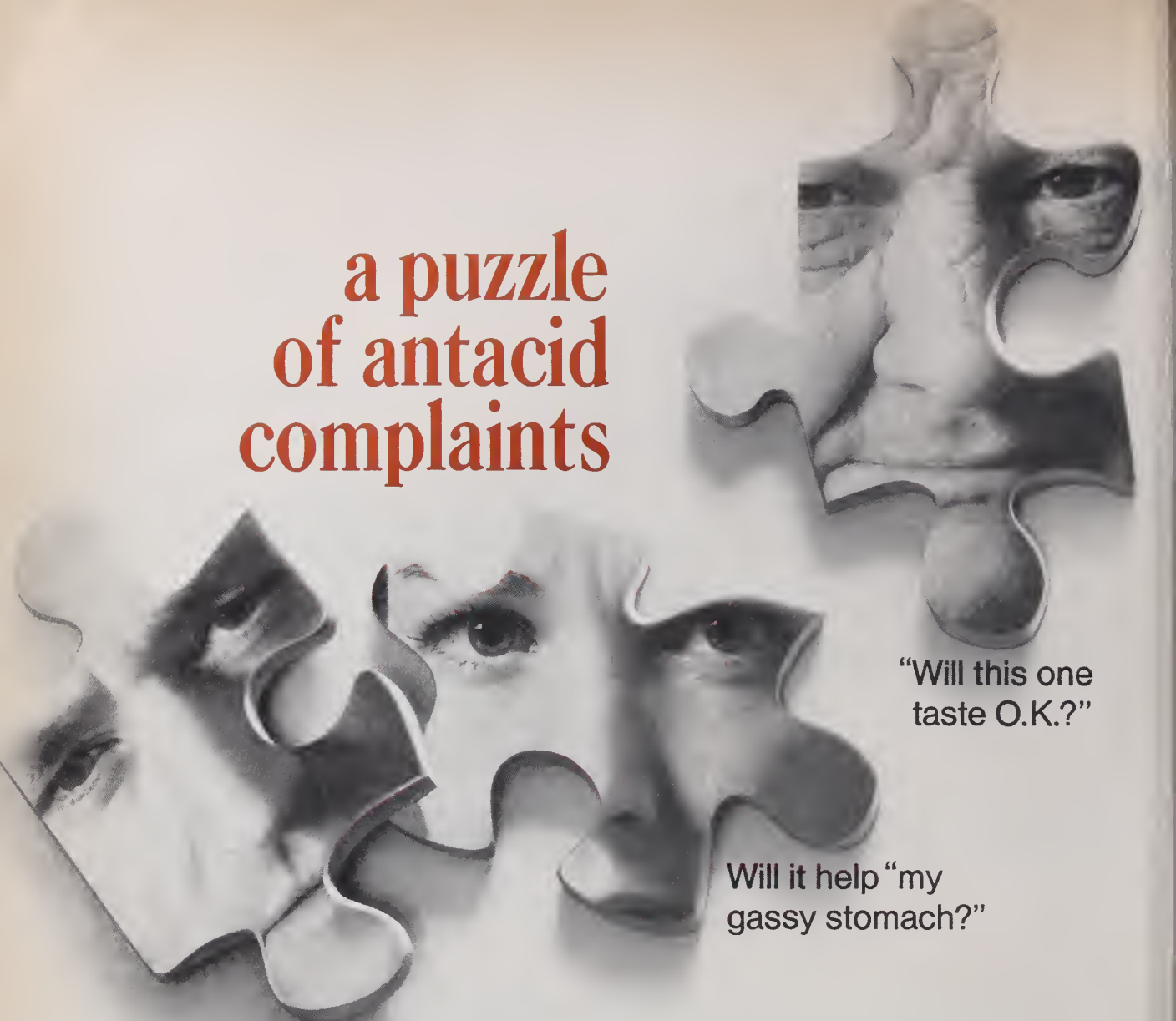
In men: When trichomonads are demonstrated, one 250-mg. oral tablet twice daily for ten days in conjunction with treatment of his female partner.

Dosage Forms: Oral tablets—250 mg.
Vaginal inserts—500 mg.

1. Complete list of references on request.

SEARLE

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Dosage: One or two tablets (well chewed or allowed to dissolve in the mouth) or one or two teaspoonfuls to be taken between meals and at bedtime.

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President's Page

THE FINANCING OF MEDICAL CARE ABROAD



WHILE WE IN AMERICA are experiencing the growing pains of Federal attempts to provide free medical care to our countrymen, it may be useful to review the conclusions of Helmut Schoeck who has edited a study entitled "Financing Medical Care." This excellent summary deals with Health Service plans now in effect in England and other countries.

In England the Health Service Act of 1946 was implemented in 1948 to provide some 50 million citizens, alien residents, and tourists with various kinds of medical care. The majority of medical specialists and nearly all general practitioners, dentists, and pharmacists take part in the N.H.S. Patients may select whatever general practitioner they wish, providing he is enrolled in the N.H.S. and accepts them. No doctor may have more than 3,500 patients on his list; most average 2,200. The doctor receives about \$2.50 capitation fee per year for each patient and an additional \$1.60 for every patient within the range of 501 to 1,500 on his list. All services are available to everyone, and most patients requiring hospitalization are placed in general wards. Semiprivate rooms are available, although scarce, for an additional daily rate. Specialists are salaried hospital staff members.

They may work full time or part time in the N.H.S. Full-time specialists are paid from \$7,140.00 to \$11,060.00 per annum.

Because of the prohibitive costs of this program, in July 1961 British workers began to pay an additional 12 cents a week in compulsory contributions to the Health Service. Each employed Briton is now required to pay \$1.50 a week, or \$78.00 a year. Nevertheless, only about one-seventh of N.H.S. costs are met in this way. More than 80 per cent of N.H.S. is paid for from general taxes. This made up 14 per cent of all government expenditures in 1960-61, nearly half as much as was spent on defense. Moreover, because of this high cost, more and more charges for specific services have had to be introduced, although violently protested by the Labor Party.

Private practice is still allowed. It has been estimated that 600 of the total 24,000 general practitioners in the whole country make a living exclusively from private patients, and many have mixed practices. The difference between privately paid and publicly paid hospital attention is so glaringly evident that insurance schemes which provide for private care have increased their membership by more than 1,000 per cent and are still rising in popularity.

In general, Reginald S. Murley concluded as follows: "(1) Despite the many grave faults of the British N.H.S., it does ensure that no individual need bankrupt himself as a result of his own or his family's ill health. (2) While securing this first worthy objective the Service does result in an enormous amount of time, energy and money being wasted. . . (3) Unlimited public demands on a 'free' hospital service tend to cause a steady deterioration in standards. (4) Patients do not show the same appreciation for services which are provided on this basis nor do doctors experience the same satisfaction in their work. . . (5) Progress and capital development tend to be completely hamstrung by a tightly controlled bureaucratic system."

William S. McClure



Sadler Succeeds Cooley as Secretary of Medical Society

MR. W. THOMAS SADLER was the unanimous choice of the Executive Board of the Medical Society of the District of Columbia to succeed the late George W. Cooley as its Secretary-Treasurer and Executive Director. The appointment was effective, April 22, 1968. Mr. Sadler came to the Society, January 1, 1968, as Assistant to the Director and, upon the sudden death of Mr. Cooley, February 15, was appointed Acting Secretary-Treasurer.

Mr. Sadler, who graduated from Duke University in 1941 with a B.A. degree in business administration and accounting, has had extensive experience in medical administration.

Preceding his first employment, with North Carolina State College in Raleigh, he was on active duty with the U. S. Army, assigned to station personnel offices. At Raleigh, as Veterans Counsellor, he acted as general liaison for the College and the Veterans Administration.

Mr. Sadler has been employed in the Washington area since 1947, and in all his posts he has been involved with personnel, counselling and administrative services. He went to Garfield Memorial Hospital in January 1957 as Administrative Assistant. In 1958, when Garfield was merged into the Washington Hospital Center (a 787-bed institution with approximately 1,900 employees), his position was changed to Assistant Administrator, with administrative responsibility for the functioning of several departments, including personnel, public relations, and publications. At the time of the merger he was responsible for the formulation of personnel policies and procedures, for the establishment and unification of salary scales for each of the 52 departments, for the assignment of employees from the 3 merging hospitals to appropriate positions in the new Center, and related administrative duties. He left the Center in June 1963 to become Administrator for the Washington Clinic where he had full responsibility for personnel, finances, policies and procedures (exclusive of those entirely medical).

In these last 2 positions Mr. Sadler had an opportunity to become well acquainted not only



THOMAS SADLER
Secretary of the Medical Society

with many Washington physicians but also with medical and hospital policies in the District of Columbia and vicinity. In fact, during his tenure as Acting Director, the Executive Board received a great many letters and verbal messages from members of the Society recommending him most highly for permanent appointment.

Mr. Sadler was born in Raleigh, North Carolina, November 24, 1919. At his home at 3100 Rittenhouse Street, N.W., he engages in horticulture and has become a skilled "do-it-yourselfer."

The Executive Board considers the Society most fortunate in securing the services of an administrator with the high qualifications of Mr. Sadler, who has already demonstrated his abilities in carrying out new and varied duties. Members who have not already done so are urged to make the personal acquaintance of the Medical Society's new, affable administrative officer.

Auto Accidents: How Can the Public Be Protected?

MOST PEOPLE, if they are involved in an auto accident, find it to be a totally new—a once in a lifetime—experience.

If the accident involves property damage only, such as a crumpled fender or a broken headlight, the claim generally is settled promptly and efficiently.

But if personal injuries are involved, new and unfamiliar problems arise for the injured and his family. First and foremost, the injured person should be sure that he has a full awareness of the nature and extent of his injuries. It would be the worst sort of folly to seek to adjust a claim involving personal injuries without first having a check-up by his family doctor.

If the accident involved a severe rear-end collision the injured party frequently is referred to an orthopedic physician for examination and treatment. If there is apparent nerve damage or sharp, shooting pain, a neurologist or neurosurgeon may be consulted. If the injured person has suffered a blow to the head there may be serious long-term implications, and the matter should be settled only after the closest medical scrutiny.

Frequently, the nature of the injuries requires the care of an internist, a psychiatrist, or an eye, ear, or throat specialist. With the advent of super-highways, such as the Washington Beltway, accidents are occurring involving the collision of vehicles proceeding at high speeds, and the resulting injuries require the concentrated attention of a team of medical specialists. Holy Cross Hospital in Silver Spring, Md., for example, renders this kind of immediate medical service to Beltway accident victims.

Generally, claims are settled only if there is fairly good proof that the accident was caused by the negligence of the other driver. Obviously, you cannot recover if you caused the accident. Sometimes, however, the liability picture is cloudy, and it is not easy to determine the relative degrees of fault. In these cases often a reduced settlement can

be worked out which will cover the medical expenses.

When an accident involves hospitalization it is imperative to retain counsel. Serious injury cases are not matters to be handled by laymen; there are just too many ramifications. Obviously, the injured party cannot have, in what is usually his first case, the experience of a seasoned adjustor. He has no idea what his case is worth, except perhaps based upon the view of a friend who "had an accident once" or upon the myriad of misinformation which he may receive from a variety of other well-intentioned but uninformed sources.

Lawyers, in accident cases, generally work on a contingent fee basis. If they are not able to effectuate a recovery, they charge no fee.

If the liability picture is clear and the injuries sustained are of a value obviously in excess of the "policy limits" then a serious case may be settled quickly. But if the case raises substantial questions as to liability, as to the amount of injuries, as to whether the injuries are permanent, and so forth, then it may take a longer time for an attorney to get an adequate settlement.

Thus he may be required to file suit, take depositions (sworn statements before a notary public involving questions by attorneys representing all parties to the case), attend pretrial conferences, and ultimately in a small proportion of cases become involved in a court trial. Occasionally a case is taken to the appellate courts.

If an attorney is known to be able to competently handle courtroom negligence litigation he can generally expedite settlement of his cases.

Although most people are rarely if ever involved in serious personal injury litigation, it is always useful for the injured to know how to protect himself within the framework of the currently existing structure for the settlement/trial of auto accident cases.

JAMES M. SCHUETTE, J.D., LL.M.

1968 National Survey on Venereal Diseases

A NATIONAL SURVEY to be conducted soon will attempt to determine the number of venereal disease patients treated by private physicians between April 1 and June 30, 1968. The survey will be conducted by the American Social Health Association and is sponsored by the American

Medical Association, National Medical Association, the American Osteopathic Association, and the U.S. Public Health Service.

Soon after July 1 a questionnaire will be sent to the 198,000 licensed medical physicians and 13,000 osteopathic physicians asking them to indicate

the number of patients they have treated whose diagnosis was infectious syphilis, other syphilis or gonorrhea.

You may want to keep a record of the venereal disease patients you treat so that completion of the questionnaire will be easy and accurate.

A similar national survey on venereal disease was conducted in 1962. The survey at that time showed that while 75 per cent of cases of infectious syphilis were treated by private physicians, 11 per cent were reported to local health departments. The results of this year's survey will provide a basis for comparison with the findings of the 1962 survey.

In the Washington Metropolitan Area the tracing of sex contacts of infected persons and bringing such contacts to examination is carried out by the D.C. Department of Public Health and the Health Departments of the suburban counties of Maryland and Virginia.

The American and National Medical Associations emphasize the importance of reporting all infectious cases of syphilis to the local Health Department.

With private physicians treating a large number of infectious syphilis cases, it is evident that control of the disease is, to a large extent, dependent on the degree of coöperation between physicians and local departments of health.

Since 1962 there has been a decided improvement in venereal disease reporting by physicians and increased willingness to allow such patients to be interviewed for contacts.

Your coöperation in the July survey is requested to assure the validity of the report.

MURRAY GRANT, M.D., D.P.H.
D.C. Director of Public Health

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Abuse of Hallucinogens: It Can Be a One-way Trip*

HALLUCINOGENS are unique among the drugs that can cause dependence: They have no accepted use in medical practice.

Strictly speaking, a hallucinogen is a drug that produces hallucinations. Actually there are fewer hallucinations than distortions—seeing or hearing things in a different way than they actually are.

Many substances have properties which can cause distortions, including morning glory seeds and an extract from a Mexican mushroom called psilocybin. First in popularity among the hallucinogens is marijuana. Next, and by far the most potent and dangerous of all, is LSD.

*From "The Crutch that Cripples: Drug Dependence," a publication of the Committee on Alcoholism and Drug Dependence, Council on Mental Health, American Medical Association.

Patients' Records

IS IT ETHICAL for a physician, retiring from practice, to sell his patients' records to another physician?

According to an opinion adopted by the AMA Judicial Council in November, 1967, a physician's records have been developed during the physician-patient relationship. This relationship, referred to in Section 9 of the Principles of Medical Ethics, requires that a physician not reveal the confidences entrusted to him in the course of medical attendance. Therefore, since the physician's records summarize these confidences, they too are cloaked with this same protection.

The Council states further that a transfer of a patient's records, without his consent, would violate this confidence. However, with the patient's consent, his records may be transferred to a physician of his choice and a reasonable charge made for secretarial or duplicating services.

Furthermore, the Judicial Council declares that a physician may not ethically purchase such records from a retiring physician or from the estate of a deceased physician.



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It is an anticholinergic drug without narcotic properties. Side effects are usually mild.

CONTRAINDICATIONS: Sensitivity to Cantil[®] (mepenzolate bromide), glaucoma, G.I. or G.U. obstruction, toxic megacolon. **WARNINGS:** Possibility of adverse reactions in advanced severe ulcerative colitis and atypical agitated reactions to phenobarbital in the elderly (Cantil with Phenobarbital). **PRECAUTIONS:** Cantil is of adjunctive use only; treatment of the underlying condition is indicated, be it organic or functional. Observe caution in conditions known to be incompatible with atropine-like drugs, e.g., open-angle glaucoma or prostatic hypertrophy. **ADVERSE EFFECTS:** Dry mouth; blurred vision; constipation; nausea; vomiting; bloating; dizziness; urinary retention. All are anticholinergic effects and usually tolerable. Habituation and idiosyncratic reactions to phenobarbital (Cantil with Phenobarbital) are possible, as is generalized rash. **DOSAGE:** One or two tablets three times a day and one or two at bedtime usually provide prompt relief. Cantil with Phenobarbital may be prescribed if sedation is required. **HOW SUPPLIED:** CANTIL (mepenzolate bromide)—25 mg. per scored tablet. Bottles of 100 and 250. CANTIL with PHENOBARBITAL—containing in each scored tablet 16 mg. phenobarbital (warning: may be habit forming) and 25 mg. mepenzolate bromide. Bottles of 100 and 250.

LAKE SIDE LABORATORIES, INC., Milwaukee, Wisconsin 53201

Infectiousness of Tuberculosis

A Report of the National Tuberculosis Association Ad Hoc Committee on Treatment of TB Patients in General Hospitals*

EVER SINCE the demonstration of a bacillus as the cause of tuberculosis there has existed a strong and universal fear of the disease as being highly contagious. Along with this an elaborate system of precautions to protect the healthy individual from infection has developed.

Within the past 20 years the advent of effective chemotherapy, more precise knowledge of the mechanism of transmission, and practical ways of disinfecting the air have minimized the risk of infection. But the attitudes toward contagion and the practices used in handling tuberculosis patients have not kept pace.

It has seemed appropriate, therefore, to reëvaluate present practices in the light of current knowledge and experience.

The tubercle bacillus is a nonmotile organism which is readily killed by heat, drying, sunshine, and ultraviolet light. It is transmitted from one person to another by air in the residues of minute droplets of moisture produced during coughing, sneezing, laughing, etc. The larger particles fall to the ground close to the expeller. The small ones, however, rapidly evaporate, leaving "droplet nuclei" which remain suspended in the air indefinitely and are carried by air currents as is cigarette smoke. Inhalation and implantation on lung tissue of these bacillus-laden droplet nuclei are necessary for transmission to be completed.

As a rule, only the more minute particles are able to penetrate into the lungs. When larger particles are inhaled, they are stopped in the nasal and upper respiratory passages and eliminated. Even though laden with tubercle bacilli, these particles do not infect because the upper respiratory tract is resistant to infection. Bacilli must reach the susceptible lung tissue, settle out, survive, and multiply before infection is established.

Available evidence suggests that tubercle bacilli lodged on fomites—linen, furniture, books, and floors—do not constitute a significant infection hazard. Most of them die quickly through the action of drying, heat, or sunlight. Dried secretions are very difficult to fragment and suspend in the air, and, furthermore, those airborne particles which do arise from surfaces are ordinarily innocuous. They are too large to penetrate into the lung. Hand washing is efficient in removing organisms possibly picked up from fomites or direct

contact with infectious sputum or other discharges.

Breaking the chain of transmission of bacilli from person to person has 2 aspects, namely, (1) prevention of contamination of the air, and (2) elimination of contamination once it has occurred. Simple, inexpensive procedures can accomplish both of these objectives.

Prevention of Contamination

This requires preventing the known case of tuberculosis from excreting bacilli into the atmosphere. The most effective tools for achieving this are:

Chemotherapy. The antituberculosis drugs ordinarily reduce the cough and sputum of tuberculosis patients within a matter of days. Within a few weeks the excretion of tubercle bacilli is usually halted. Chemotherapy is thus very effective in reducing the hazard of transmission of tuberculosis from the patient to others. The occasional patient with drug-resistant organisms constitutes a special problem since he may continue to excrete tubercle bacilli.

Covering of nose and mouth by the patient when coughing, raising sputum, sneezing, laughing, etc. This is an effective procedure for preventing atomized secretions from becoming airborne. Thus the transmission chain is broken at its source. Of course, all raised sputum should be expectorated into tissues, placed in special containers and burned, or flushed into the sewerage system.

Decontamination

The aim of decontamination is to remove from the air any tubercle bacilli excreted by the patients into the air. Decontamination should be applied particularly to places where people with unknown or unsuspected tuberculosis are apt to be present. This includes emergency and admitting rooms of general hospitals and clinics. It also includes rooms used by patients until their chemotherapy has become effective.

Ventilation. The concentration of organisms in the air of a room and hence the likelihood of inhaling them are reduced if the room is well ventilated. Good ventilation is recommended but is ordinarily much slower than ultraviolet light in reducing the concentration of airborne organisms.

Ultraviolet light. The use of ultraviolet lights is an additional valuable procedure for disinfection.

* Reprinted from The American Review of Respiratory Disease, 1967 (October), 96, no. 4.

Studies have shown that the air of tuberculosis patients' rooms can be rapidly made noninfectious by irradiation with ultraviolet light. Techniques for checking the sterilizing efficacy of an ultraviolet installation are now available. Ultraviolet lights should be used in rooms which are likely to be frequented or occupied by patients with undiagnosed or unsuspected tuberculosis, in rooms occupied by diagnosed patients in the early phase of chemotherapy, and in air ducts when air is being recirculated.

Such installations are effective not only against tubercle bacilli but also against other organisms responsible for intrahospital infections.

Gowns and masks. The use of gowns by personnel as isolating mechanisms in airborne infections such as tuberculosis is ineffective and not called for. Neither are masks indicated for personnel except in instances of intimate face-to-face contact. If anyone is to be masked it should be the patient. Masking him is indicated only if his condition is such that he is unable to control or unwilling to cover his cough.

Nonpulmonary tuberculosis. Since the discharges from body area afflicted with nonpulmonary tuberculosis do not become airborne, the danger of infection from such sources is remote. Of course, if active pulmonary tuberculosis is also present, the principles outlined are applicable.

The undiagnosed and unsuspected case of tuberculosis. It should be made clear that the greatest risk of infection arises from the individual with undiagnosed or unsuspected tuberculosis. A very important safeguard for hospitals in this situation is a consistent program of tuberculin testing and chest X-raying of all employees who may be subject to exposure and of all hospital admissions.

ARTHUR M. OLSEN, M.D., *Chairman*
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AUDREY M. MCCLUSKEY, R.N.

RICHARD L. RILEY, M.D.

Patients Needed for Clinical Center Studies

THE COÖPERATION OF PHYSICIANS is requested in the following studies being conducted at the Clinical Center of the National Institutes of Health in Bethesda, Md.

Ewing's Sarcoma: Referral of patients with Ewing's sarcoma is needed for a continuing study being conducted by the Radiation Branch of the National Cancer Institute.

Patients who have received no treatment are preferred, but selected patients with previous therapy will also be accepted for admission as inpatients. Upon completion of their studies, patients will be returned to the care of the referring physician, who will receive a summary of findings.

Physicians interested in having their patients considered for admission to this study may write or telephone Dr. Ralph E. Johnson, Clinical Center, Room B1B-41B, National Institutes of Health, Bethesda, Md. 20014; telephone: (301) 496-5457.

Pectus Excavatum: A study of cardiac function in patients with a severe pectus excavatum chest wall deformity is being conducted by the National Heart Institute.

Recent investigations suggest that cardiac function may be significantly impaired in some patients with this type of chest deformity. If

further study verifies these results, such patients may be candidates for operative correction.

Referrals would be appreciated of any patient between 16 and 30 years of age who has a severe pectus excavatum deformity and who complains of excessive fatigue and exertional dyspnea.

Physicians interested in having their patients considered for admission to the Clinical Center for this study may write or telephone Dr. Stephen Epstein, Clinical Center, Room 7-B-14, National Institutes of Health, Bethesda, Md. 20014; telephone: (301) 496-3015.

Chronic Myelogenous Leukemia: A continuing study of chronic myelogenous leukemia is being conducted by the Medicine Branch of the National Cancer Institute.

Referrals of patients with chronic myelogenous leukemia are needed. Patients of all ages with high white blood cell counts and platelet counts are needed for studies of newer chemotherapeutic agents and as a source of white blood cells and platelets for in vitro and in vivo study.

Physicians who wish to have their patients considered for the study may write or telephone Dr. George P. Canellos, Clinical Center, Room 12-N-236, National Institutes of Health, Bethesda, Md. 20014; telephone: (301) 496-4916.

► HEALTH DEPARTMENT NOTES

D. C. Hospital Inspections

FIFTEEN WASHINGTON HOSPITALS are now licensed by the D. C. Department of Public Health following an inspection of hospital facilities under a new regulation adopted in 1967 by the former D. C. Commissioners.

Armed with 17-page questionnaires, Health Department inspection teams composed of a physician, public health nurse, and environmental health officers made certain that the hospitals meet "minimum standards of the establishment and maintenance of private hospitals in order to protect the public interest by promoting the health, welfare and safety of individuals in the hospitals."

Receiving licenses were Providence Hospital, Hillcrest Children's Center, Morris Cafritz Memorial Hospital, Columbia Hospital for Women, the Psychiatric Institute, Children's Convalescent Hospital, George Washington University Hospital, Freedmen's Hospital, Children's Hospital, Doctors Hospital, Sibley Memorial Hospital, Georgetown University Hospital, Hadley Memorial Hospital, Eastern Dispensary and Casualty Hospital.

The inspection teams checked plant facilities, availability of physicians and nurses, hospital procedures, health care units for infants, children and adults, emergency-room service, X-ray facilities, medical records, sterilization room, outpatient care, laboratory, and pharmacy.

Included in the inspection were the availability of health examinations for hospital employees who come in contact with patients; administrative procedures; services for anesthesia; communicable disease facilities; maternity, newborn and pediatric accommodations; psychiatric, radiological, radioisotope, surgical, dietary and social services; central sterile supply; contract services; laundry; maintenance and operation of plant; electric power and water facilities; and rest rooms and drinking fountain facilities.

In addition to determining if the District's private hospitals meet the proper standards of operation and services, the Health Department also must determine whether or not the facilities meet the proper definition of a hospital. In some cases it might be identified as a nursing home or some other type institution related to hospitals.

For the purpose of the local hospital inspections,

the term "hospital" means "any building or part thereof, or group of buildings, in which there are facilities, services, or ancillary services provided for the housing of 2 or more persons not related by blood or marriage within the third degree of consanguinity to the owner, operator, or manager of such buildings, part of building, or group of buildings, for the diagnosis, treatment, or care of physical or mental conditions for a period of more than 24 consecutive hours; or for maternity care involving labor and delivery for any period of time."

Before a private hospital is licensed, a report of the Health Department inspection team is submitted with a certification from the Fire Chief and Director of Licenses and Inspections, indicating that the building passes the building code and fire safety regulations.

Each hospital administrator was notified by mail noting any deficiencies and the action required to correct them. Deficiencies found at 10 of the hospitals were of a minor nature and corrections were requested to be made before the next inspection date.

Licenses for the operation of private hospitals in the District of Columbia are valid for 1 calendar year. Hospital administrators will be notified of the next survey in September, allowing them ample time to apply for new licenses.

Although Government hospitals are not required to be licensed, both D.C. General and Glenn Dale Hospitals are expected to meet minimum requirements of the new hospital regulations.

MURRAY GRANT, M.D., D.P.H.
D. C. Director of Public Health

► NEW MEMBERS

Active

LUIS AWAPARA, M.D. Office: 3230 Pennsylvania Avenue, S.E. Born in Lima, Peru. Medical degree: University of Madrid, 1962. Specialty: Neurology.

RICHARD L. GROSS, M.D. Office: 8318 Wisconsin Avenue, Bethesda, Md. Born in Allentown, Pa. Medical degree: Hahnemann Medical College, 1960. Specialty: Psychiatry.

CARROLL WILBUR JACKSON, M.D. Office: Freedmen's Hospital. Born in Lynchburg, Va. Medical degree: Meharry Medical College, 1958. Specialty: Anesthesiology.

FLORENTINO PALMON, JR., M.D. Office: 5317 16th Street, N.W. Born in Manila, the Philippines. Medical degree: University of the Philippines, 1954. Specialty: Internal Medicine.

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Average adult dosage: 2 tablets four times daily, given at least one hour before, or two hours after meals.

Contraindications: History of hypersensitivity to any component.

Warning: If renal impairment exists, even usual doses may lead to liver toxicity. Under such conditions, lower than usual doses are indicated and, if therapy is prolonged, serum level determinations may be advisable. Hypersensitive individuals may develop a photodynamic reaction to natural or artificial sunlight during use. Individuals with a history of photosensitivity reactions should avoid direct exposure while under treatment, which should be discontinued at first evidence of skin discomfort.

Precautions: Some individuals may experience drowsiness, anorexia, and slight gastric distress. If excessive drowsiness occurs, it may be necessary to increase the interval between doses. Persons on full dosage should not operate any vehicle. Use may result in overgrowth of nonsusceptible organisms. If infections appear during therapy, appropriate measures should be taken. Infections caused by beta-hemolytic streptococci should be treated for at least 10 full days to help prevent rheumatic

fever or acute glomerulonephritis. Use of tetracycline during tooth development may cause discoloration of teeth.

Adverse Reactions: Gastrointestinal—anorexia, nausea, vomiting, diarrhea, stomatitis, glossitis, enterocolitis, pruritus ani. Skin—maculopapular and erythematous rashes (a case of exfoliative dermatitis has been reported); photosensitivity; onycholysis and discoloration of nails (rare). Kidney—rise in BUN, apparently dose related. Hypersensitivity reactions—urticaria, angioneurotic edema, anaphylaxis. In young infants, bulging fontanels following full therapeutic dosage has been reported. This has disappeared rapidly when drug was discontinued. Teeth—dental staining (yellow-brown) in children of mothers given tetracycline during the latter half of pregnancy and in children given the drug during the neonatal period, infancy, and early childhood. Enamel hypoplasia has been seen in a few children. Blood—anemia, thrombocytopenic purpura, neutropenia, eosinophilia. Liver—cholestasis (rare), usually at high dosage. If adverse reaction or idiosyncrasy occurs, discontinue medication and institute appropriate therapy.



LOWELL M. WEISS, M.D. Office: Dunham Army Hospital, Carlisle Barracks, Pa. Born in Newark, N. J. Medical degree: George Washington University, 1962. Specialty: Internal Medicine.

Resident-Intern

JOHN BROWN CRAFT, JR., M.D. Office: George Washington University Hospital. Born in New York City. Medical degree: Georgetown University, 1963. Specialty: Anesthesia.

RAFAEL CASANAS LEE, M.D. Office: Providence Hospital. Born in the Philippines. Medical degree: University of the East, Manila, 1965. Specialty: Internal Medicine.

▶ DOCPAC BRIEFS

or

"Whatever Your Politics—Vote DOCPAC!"

"WHATEVER YOUR POLITICS—Vote DOCPAC!" enunciates the bipartisan nature of the District of Columbia Medical Political Action Committee, the organization that provides an effective mechanism for the District's medical community to have a larger and more effective voice in influencing the quality of our Government at the national level.

DOCPAC is a nonprofit, nonincorporated group with membership open to doctors, their wives, and others who share concern about the current course of the Government. The dues of the organization are used for political education and for candidate support, with emphasis on the latter.

The main objective of DOCPAC is to find and support candidates for public office who possess integrity and capabilities in order to provide us with better leadership. Emphasis is on Congress-

PHYSICIANS' PLACEMENT SERVICE

THE MEDICAL SOCIETY'S **Physicians' Placement Committee** maintains a service to benefit its members and other physicians by locating suitable openings, assistants or associates. It will also assist Government agencies and industrial organizations to secure physicians for their Medical Departments. Call 223-2230—ask for Placement Service.



DR. DWIGHT L. WILBUR, President-elect of the American Medical Association, and Mrs. Wilbur were guests of honor at a reception, April 29, given by the Medical Society of the District of Columbia in its Exhibit Hall. Among those in the receiving line were (left to right): Vice Admiral George G. Burkley, Physician to President Johnson; Dr. Wilbur; Dr. William S. McCune, President of the Medical Society; Mrs. Wilbur; and Dr. Louis M. Rousselot, Deputy Assistant Secretary for Health and Medicine, Department of Defense. The event was an especially delightful occasion, with many physicians and their wives in attendance.

sional races, and DOCPAC stresses its bipartisan philosophy, believing that the caliber of the candidate transcends his party affiliation. The members of DOCPAC are much more interested in the personal platform, philosophy and qualities of the statesman than they are in his party label.

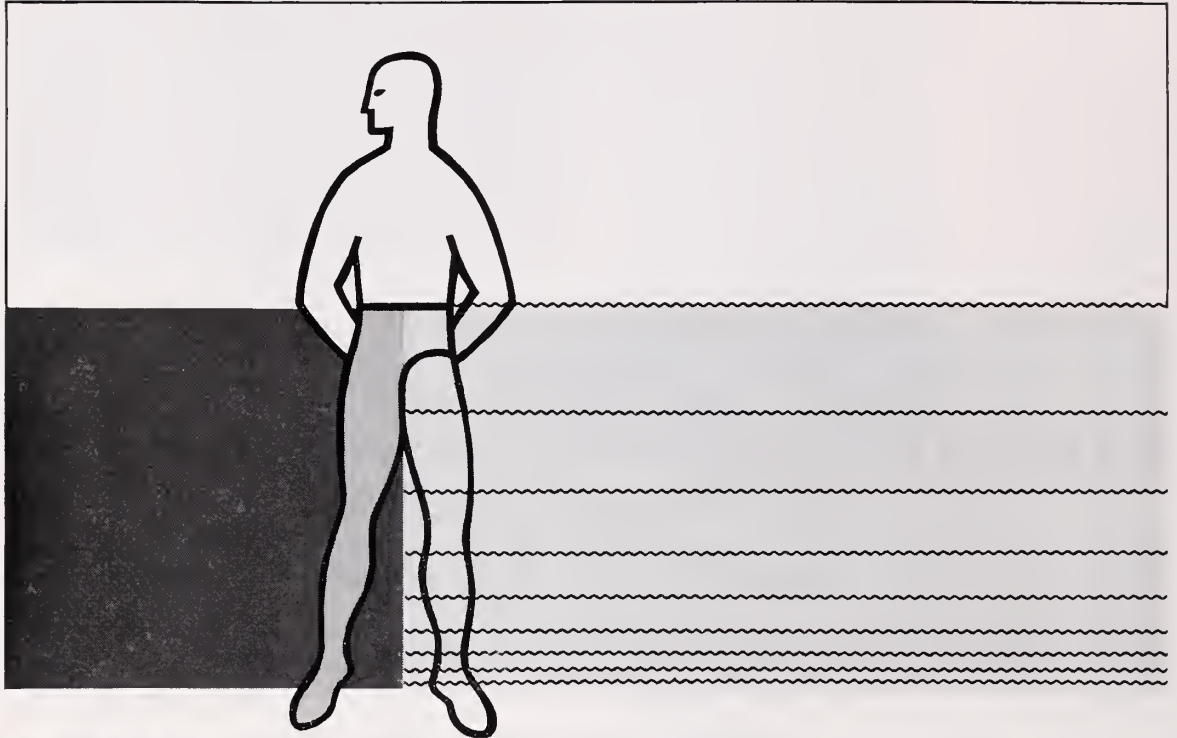
DOCPAC enables a large number of relatively small financial contributions to be pooled into an amount sizable enough to make an impact on selected political campaigns. The Board of Directors of DOCPAC determines which candidates are aided.

DOCPAC is affiliated on the national level with the American Medical Political Action Committee. Membership in AMPAC goes along with DOCPAC. Thus the force of the medical profession and its allies is felt in political campaigns throughout the entire country.

If you have not already joined DOCPAC, do so now. This is an election year, and medicine's voice must be heard. Send your dues now (\$20 individual, \$30 family) to: DOCPAC, 825 New Hampshire Avenue, N.W., Washington, D. C. 20037.

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Chairman

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News & Personals

Summary of Executive Board Actions

Proceedings of April 22 Meeting

Dinner for the Board members was served at 6:30 p.m. in the Exhibit Hall of the Medical Society. Dr. Edward W. Nicklas, Chairman, presided at the meeting. Present were Drs. Frank S. Bacon, Raymond T. Holden, John J. Hughes, William S. McCune, Jed W. Pearson, Jr., Gudrun Augustin-Rueckert, Paul R. Wilner, Henry D. Ecker, and Mr. Thomas Sadler, Secretary. The meeting was called to order at 7:30 p.m.

The minutes of the March 25, 1968 meeting were approved with some minor amendments.

Committee Meetings: The Secretary reported the following committees had met since the last meeting of the Board:

- March 26 Committee on Liaison with Allied Professions
- 27 Committee on Communicable Diseases
- 28 Medical Bureau Committee
- 29 Committee on Continuing Education
- April 2 Committee on Blood Banks
- 2 Committee on Ruffin and Other Bequest Funds
- 3 Committee on Liaison with the Clergy
- 3 Medical Bureau Subcommittee
- 3 Fee Review Committee
- 4 Traffic Committee
- 4 Committee on Aviation Medicine
- 5 Committee on Liaison with Hospitals
- 8 Subcommittee on Occupational Health
- 8 Committee on Emergency Medical Services
- 9 Board of Credentials
- 9 Committee on Medicolegal Problems
- 10 Finance Committee
- 17 Membership Committee
- 18 Medical Bureau Committee
- 22 Committee on Continuing Education

Board of Credentials: On recommendation of the Board of Credentials, 5 applicants were elected to Active membership and 2 to Resident-Intern membership. Their names appear on page 341. Approval was given to the following changes in membership status:

Transfers

Active to Associate: Charles E. Edwards, Walcutt W. Gibson, Bonita J. Peterson and Harold B. Zimmerman

Resident-Intern to Associate: Ricardo Longoria

Reinstatement

Associate: Arthur J. Linden

Resignations

Active: Norman Fee, Fritz A. Freyhan and David S. Sprague

Selection of Executive Director: Upon the recommendation of Dr. McCune, Chairman of the Recruitment Committee, the Board unanimously elected Thomas Sadler to be Executive Director and Secretary-Treasurer of the Medical Society. The initial contract is for a year and will be drawn up by the Society's Legal Counsel.

Finance Committee: As recommended by the Finance Committee, the Board accepted the 1967 audit, prepared by Mr. James Sanders, Certified Public Accountant.

Committee on Communicable Diseases: The Board approved the recommendation of the Committee that a Society mailing should include the pamphlet, "Regulations for International Certificates of Vaccination" whenever there are changes.

Letter from Mayor Washington's Office: Dr. McCune read to the Board a letter dated March 26, 1968 from Mayor Washington acknowledging Dr. McCune's earlier letters of January 11 and March 5, offering to the Mayor the services of the Society.

Committee on Rehabilitation: Considerable discussion was held regarding a letter from Dr. Margaret M. Kenrick, Chairman of the Committee, for the establishment of a planning grant to evaluate the recommendations from the Report of the Council on Rehabilitation of the Medi-



DR. WILLIAM W. FUNDERBURK (right), Assistant Professor of Surgery at Howard University College of Medicine, receives a Certificate of Humanitarian Service from President McCune of the Medical Society, April 22. During the last 3 months of 1967 Dr. Funderburk served under the AMA-sponsored program as a volunteer physician in a hospital for Vietnamese in Danang, South Vietnam.

cal Society of the District of Columbia and the Metropolitan Medical Societies of Maryland and Virginia which was completed in January 1960. It was agreed that Dr. Kenrick and her Committee be asked to submit an outline of what they plan to accomplish and the financing needed and that Dr. Kenrick be invited to a future meeting of the Board to present her proposal in detail.

Membership Lists for Political Campaigns:

Mr. Sadler asked for guidance from the Board in the use of the Society roster in political campaigns, pointing out that already he had received a request for its use in the "Nixon for President" campaign. The Board voted that the Society membership roster not be used for political campaign purposes.

Proposed Surtax Questionnaire: Dr. McCune discussed briefly the replies received to a questionnaire in regard to the proposed surtax. No definite action was taken.

Second Socioeconomic Congress: The Board accepted the report on the Second AMA Socioeconomic Congress, submitted by Dr. Bacon, and voted to refer this report to the Committee on Medical Practice.

Committee on Medicolegal Problems: Mr. Sadler stated that through the work done by Dr.

Harvey Ammerman and his Committee the premium increase for malpractice insurance had been lowered by approximately 14 per cent of that proposed, resulting in considerable savings to the membership. The Board commended the Committee on its effective handling of malpractice insurance problems.

Other Business

1. The Retirement Program of the Prudential Insurance Company was discussed and it was recalled that at the meeting of the Executive Board, December 4, 1967, a motion was made and carried to co-sponsor the proposed Retirement Program and to inform the membership of all details of the Program. The Board requested the President to prepare a letter to the membership giving in full detail the Retirement Program for physicians as proposed by the Prudential Insurance Company.

2. Dr. Bacon reported that he had done considerable work in preparing a letter, as instructed by the Board, to be sent to the F.D.A. requesting a change in regulations regarding the interstate shipment of blood and blood components. However, the Committee on Blood Banks has now reversed itself, he said, and therefore he asked that the letter not be sent at this time and that a proposed resolution on this matter not be submitted to the AMA but that our own Legal Counsel be asked for help on the problem.

3. Dr. McCune reported on the response from the membership to the questionnaire asking whether members favored more business and/or scientific meetings. It was agreed that the results of the questionnaire be published in the Newsletter for the information of the total membership.

4. Dr. McCune read a letter from Mrs. Wallace M. Yater, Chairman of International Visitors Service Council (IVIS), and the recommendations of the Hospital Committee. In essence the Board agreed with the Committee on Liaison with Hospitals. No motion was made but the matter was referred back to Dr. Thomas M. Peery and his Committee with the request that the Committee contact the local embassies to determine which ones would be interested in sponsoring or contributing to proposed receptions.

5. Dr. Bacon's report on the recent Helicopter Symposium, sponsored by the Committee on Aviation Medicine, was discussed. It was voted to refer the possibility of establishing helicopter ambulance service to the Medical Council for full exploration of all aspects.

6. Mr. Sadler reported that as a security measure he had contracted with the National Detective Agency to provide patrol service for the entire building after office hours.

There being no further business, the meeting was adjourned at 10:15 p.m.

► GENERAL NEWS

MEDICO needs a number of specialists to assist in its volunteer programs overseas during the ensuing 12 months. Help is greatly desired in Honduras, Afghanistan, the Dominican Republic, and also in Malaysia and Tunisia.

Tours are scheduled for periods of 2 calendar months and are in support of a permanent medical team. The volunteer specialist donates his services and expenses, the latter being tax-deductible. Although all specialists are needed, the greatest number of vacancies exist at present for gynecologists, pediatricians, orthopedic surgeons, ophthalmologists, general surgeons, anesthesiologists, and radiologists.

Information may be obtained by writing

MEDICO, 2007 Eye Street, N.W., Washington, D. C. 20006, or by telephoning 223-2277.

The possibilities of aeromedical evacuation during times of emergency or special need were discussed during a **Symposium on the Helicopter Ambulance** sponsored by the Medical Society's Committee on Aviation Medicine at the Washington Hospital Center, April 11.

Highlight of the meeting was a simulated helicopter ambulance emergency transfer of 2 "accident victims" by helicopter from the scene of the "accident," College Park airport, to the Washington Hospital Center. Two young women, one the daughter of Dr. William S. McCune, President of the Society, bandaged as patients, were placed on litters in a double-decker rack fitted up in the helicopter. After landing, the mock patients were transferred by truck to the hospital, with doctors, nurses and attendants escorting them.

Five other helicopters on display were used to take Government officials, physicians and others attending the Symposium on demonstration rides.

The Aerospace Industries Association cooperated with the Medical Society on the project. Dr.



DR. WILLIAM S. McCUNE (left), President of the Medical Society, assists in the removal of a "patient" from the helicopter during the aeromedical evacuation symposium, April 11. On the right is a representative of one of the 5 helicopter companies which co-sponsored the event at the Washington Hospital Center.

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Robert S. Poole, Chairman of the Society's Committee on Aviation Medicine, took charge of arrangements.

The American Medical Association's Council on Medical Education, in coöperation with the American Society of Clinical Pathologists, has established an **approval program for certified laboratory assistants.**

It is the ninth health occupation for which the AMA now maintains approval programs to assure that training standards acceptable to the medical profession are being met. Before the AMA established the approval program last December, schools for certified laboratory assistants were approved only by the American Society of Clinical Pathologists.

Upon completing an accredited 12-month course of hospital or laboratory school training and passing an examination, graduates are designated as certified laboratory assistants.

The current list of AMA-approved schools for laboratory assistants, as well as lists of other AMA-approved or accredited schools—cytotechnology, inhalation therapy technician, medical record librarian, medical record technician, medical technology, occupational therapy, physical therapy, and X-ray technology—may be obtained by writing the AMA's Department of Allied Medical Professions and Services.

A Physician-Clergy Symposium, initiated by the Medical Society's Committee on Liaison with the Clergy, Dr. Elizabeth S. Kahler, Chairman, was presented in the Medical Society's building, May 3. A special guest speaker was the Reverend Dr. Paul B. McCleave, Director of the Department of Medicine and Religion at the American Medical Association.

The topics presented concerned the terminally ill patient, abortion, organ transplants, problems of interprofessional communication, and genetic counseling. Among the speakers were Drs. John J. Lynch, Richard A. Wilson, Ernest Lowe and Frank G. MacMurray, all members of the D. C. Medical Society. Guest speakers were the Reverend James Macdonell, St. Mark Presbyterian Church, Rockville, Md.; Canon Richard P. Williams, Holy Cross Episcopal Mission, Bethesda, Md.; and the Reverend Robert Baumiller, S.J., and Dr. J. M. Brian O'Connell, of Georgetown University School of Medicine. Dr. Maxwell Boverman was Chairman of the Committee on Arrangements.



DR. GERALD H. McATEER (left) receives the 1968 Award of Honor from **Dr. James R. Nugent**, President of the Georgetown Clinical Society, at its annual Old Timers Meeting, March 20. The award was presented to Dr. McAtteer for his contributions to medicine and to Georgetown University, where he is Clinical Assistant Professor of Surgery.

A buffet luncheon was served, and a special feature was a Panel on Hospital Calling conducted during the noon hour. Panel participants were hospital administrators from Georgetown, Freedmen's, and the Washington Hospital Center and hospital chaplains from the Clinical Center of the National Institutes of Health and Sibley Memorial Hospital.

The American Medical Political Action Committee (AMPAC) has established a Fellowship in Business-Government Relations at the American University's School of Business Administration. AMPAC will provide annually a Graduate Fellowship of \$4,500, plus a \$500 grant to the Business-Government Relations Program.

American University's School of Business Administration is a pioneer in an effort to cement a relationship between Government on the one hand and business and the professions on the other. Professor Robert W. Miller, Director of the Program at American University, said that the research by the graduate students is helping to develop literature and a greater understanding of the nature and contribution of private enterprise to our total society.

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An all-day **Blood Component Therapy Workshop**, arranged by the American Association of Blood Banks and supported by a Public Health Service grant, was held on April 5 at the Naval Medical School in the National Naval Medical Center, Bethesda, Md. Its purpose was to train physicians and medical personnel serving cancer patients in the preparation and use of blood fractions rather than whole blood. This provides more precise treatment which is less hazardous to the patient and uses available blood more effectively. Sixty-one pathologists and medical technologists from the Washington Metropolitan Area attended the Workshop.

Co-sponsoring the event were the Metropolitan Washington Blood Banks and the Section on Pathology and Laboratory Medicine of the Medical Society of the District of Columbia. Among the workshop faculty were Dr. William G. Battaile, of Sibley Memorial Hospital; Dr. Vernon E. Martens, of the Washington Hospital Center; and Dr. Sanford L. Leikin, of Children's Hospital of D. C. Dr. Battaile is Secretary of the American Association of Blood Banks.

The Board of Trustees of the James F. Mitchell Foundation for Medical Education and Research announces the presentation of the Third International Medical Research Award to be jointly shared by Dr. Donald S. Frederickson, of the National Heart Institute, and Dr. Edward H. Ahrens, Jr., of the Rockefeller University, in recognition of their outstanding contributions to the physiology of lipoproteins and plasma lipids and their significance in certain diseases. The awards were presented to them at a luncheon at the Statler-Hilton Hotel, May 17.

This year marks the seventh anniversary of the opening of the Research Institute at 5401 Western Avenue, N.W. Researchers at the Institute have been scientists and physicians from Denmark, Holland, Sweden, Germany, Greece, India, Italy, Japan, Chile, Switzerland and Pong Kong. The work is largely financed by a grant from the U. S. Public Health service, through the National Heart Institute.

▲ PERSONALS

Dr. Howard A. Donald has been named Chief of Staff of Columbia Hospital for Women, succeeding Dr. Stafford W. Hawken. Dr. Donald

has been on the attending staff of the Hospital since 1948, and is on the executive and teaching staffs of Doctors Hospital.

Dr. Donald received his medical degree from George Washington University School of Medicine in 1939. Commissioned Lieutenant Colonel, he served in the Medical Corps of the U. S. Army during World War II. Following the War he trained in obstetrics and gynecology at the University of Pennsylvania Graduate School of Medicine, from 1945 to 1946, then returned to Washington for a 2-year residency at Columbia Hospital. He is a diplomate of the American Board of Obstetrics and Gynecology.

Dr. Robert S. Jason, of Howard University College of Medicine, received the St. George Medal and Citation for outstanding contributions to cancer control from Dr. C. Roger Kurtz, President of the D. C. Division of the American Cancer Society, at the annual meeting of the Society, May 8, in the Medical Society's Exhibit Hall.

Dr. Jason has been a member of the Board of Trustees of the D. C. Division since 1962, and is a member-at-large of the Cancer Society's National Board of Directors.

Dr. and Mrs. Samuel M. Dodek have endowed an annual prize in female endocrinology in honor of their friend, the late Bernhard Zondek of Jerusalem, Israel. The prize will be awarded each year to a member of the Senior Class of the School of Medicine of George Washington University who demonstrates commendable knowledge in the fields of female endocrinology and steroid chemistry.

Dr. Roland B. Scott, Professor of Pediatrics at Howard University College of Medicine, has been appointed to membership on the Committee for the Handicapped Child of the American Acad-

emy of Pediatrics. This Committee is concerned with developing guidelines for the improvement of the care of children with chronic handicapping illnesses. The Committee consists of 10 members plus consultants from medical centers in various parts of the United States. Dr. Scott's interest is in children with sickle-cell anemia and those with severe allergies, particularly bronchial asthma.

Dr. Henry A. Grennan was named to serve as a member of the Committee on Nominations of the American National Red Cross during its National Convention in Denver, Colo., May 6-8. Dr. Grennan has been active in the D. C. Chapter as a Red Cross volunteer since 1946, a member of its Board of Directors since 1954, and a member of the Executive Committee since 1959.

► OBITUARIES

Joseph Burton Glenn, M.D.

(1896-1968)

DR. JOSEPH B. GLENN, formerly chief of the Cardiology Department of Sibley Memorial Hospital, died April 23, 1968, at Doctors Hospital.

Dr. Glenn was born in Farmville, Virginia, October 20, 1896. He was a graduate of Central High School in Washington and received both his Bachelor of Science and Doctor of Medicine degrees from George Washington University, the latter in 1921. He interned at Roosevelt Hospital in New York City and served a year's residency at the same Hospital. A number of years later, in 1944, he enrolled at the University of Pennsylvania Graduate School for special study in cardiology and continued his training in cardiology at Michael Reese Hospital in Chicago.

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Dr. Glenn taught at George Washington University in the early 1930's and at Georgetown University from 1938 to 1945. He was head of the Cardiology Department at Sibley for a number of years, until about 1958. At Garfield Memorial Hospital, before it merged into the Washington Hospital Center, he was Director of the Heart Clinic. He had served as consultant in cardiology to Garfield and Doctors Hospitals and to the Washington Hospital Center.

Dr. Glenn was elected to Active membership in the Medical Society of the District of Columbia in 1925 and had been a Life member since 1965. He was a Fellow of the American College of Physicians and the American College of Cardiology, a diplomate of the American Board of Internal Medicine, and a member of the Hippocrates-Galen Society, the George Washington University Medical Alumni Association, and the Pan American Medical Society. He also belonged to the Cosmos Club and the Chevy Chase Club.

Surviving him are his wife, Mrs. Louise Duckett Glenn, of 2015 Que Street, N.W., and 2 sons, Joseph B. Glenn, Jr., of Washington, and Stirling Glenn, of Arlington, Va.

John Manley Orem, M.D.

(1903-1968)

DR. JOHN M. OREM, President and Administrator of Sibley Memorial Hospital, died April 5, 1968, at the Hospital.

Dr. Orem, a Washingtonian, was born October 20, 1903. After receiving his medical degree from George Washington University School of Medicine in 1930, he interned at Garfield Memorial and Georgetown Hospitals. He was engaged in private practice in the District of Columbia from 1931 until 1940, when he was elected President of Sibley Hospital.

Dr. Orem was an Active member of the Medical Society of the District of Columbia from 1938, and was a member of the American Medical Association. He was a 32nd degree Mason and a member of Almas Shrine, a member of the Board of Trustees of American University, and an Honorary member of the Kiwanis Club. He was active in the Metropolitan Memorial Methodist Church.

He leaves his wife, Mrs. Marie Orem, of 3001 Veazey Terrace, N.W.

Psychiatric Consultation in Private Practice—Solomon

(Continued from page 323)

should not also treat. They should—there is enough for all.) It is best to clarify who will do the treatment if any is required when the consultation request is first made.

The psychiatrist can cause much mischief, even havoc, by offering his opinions to the patient before consulting with the referring doctor. If the latter makes it clear from the start that he wishes the psychiatrist to take right over, of course that is another matter. But otherwise it is not a "consultation" until the 2 doctors have conferred. The non-psychiatrist physician should be given the courtesy of deciding how much he would like to tell the patient. There are times, indeed, when the psychiatrist's opinion may be modified by what he hears in his discussion with the referring physician. It goes without saying that the psychiatrist will never criticize his colleague to the patient or relatives. He must be especially careful of criticism by innuendo or the silent lift of an eyebrow: "He gave him [a schizophrenic patient] an antidepressive?" "He thought the court should appoint a conservator for your mother?" The tone of voice may be crucial; simple inquiry is one thing, incredulity is another.

There is a Biblical story that is appropriate for a conclusion. A very young child was lost in a huge cornfield. The search was frantic and futile and finally the child was found dead. Someone said, "If only we had joined hands and walked through the field, the child could have been found quickly." Perhaps also a missing diagnosis and treatment for a patient can be found if we join hands in different disciplines and walk together, the patient's welfare our solemn trust.

Immunization Memoranda re Plague and Cholera

(Continued from page 326)

have been reported elsewhere in West Pakistan which had previously been free of the disease this year.

There have been unofficial reports of stringent quarantine measures beyond those authorized by the International Sanitary Regulations. An inquiry concerning these has been made through WHO. The epidemic poses no threat to the health of travelers, although precautions should be exercised if visiting Multan itself. Travelers may encounter delays, however, when proceeding from West Pakistan and even from other countries in the area.

JAMES W. MOSLEY, M.D.

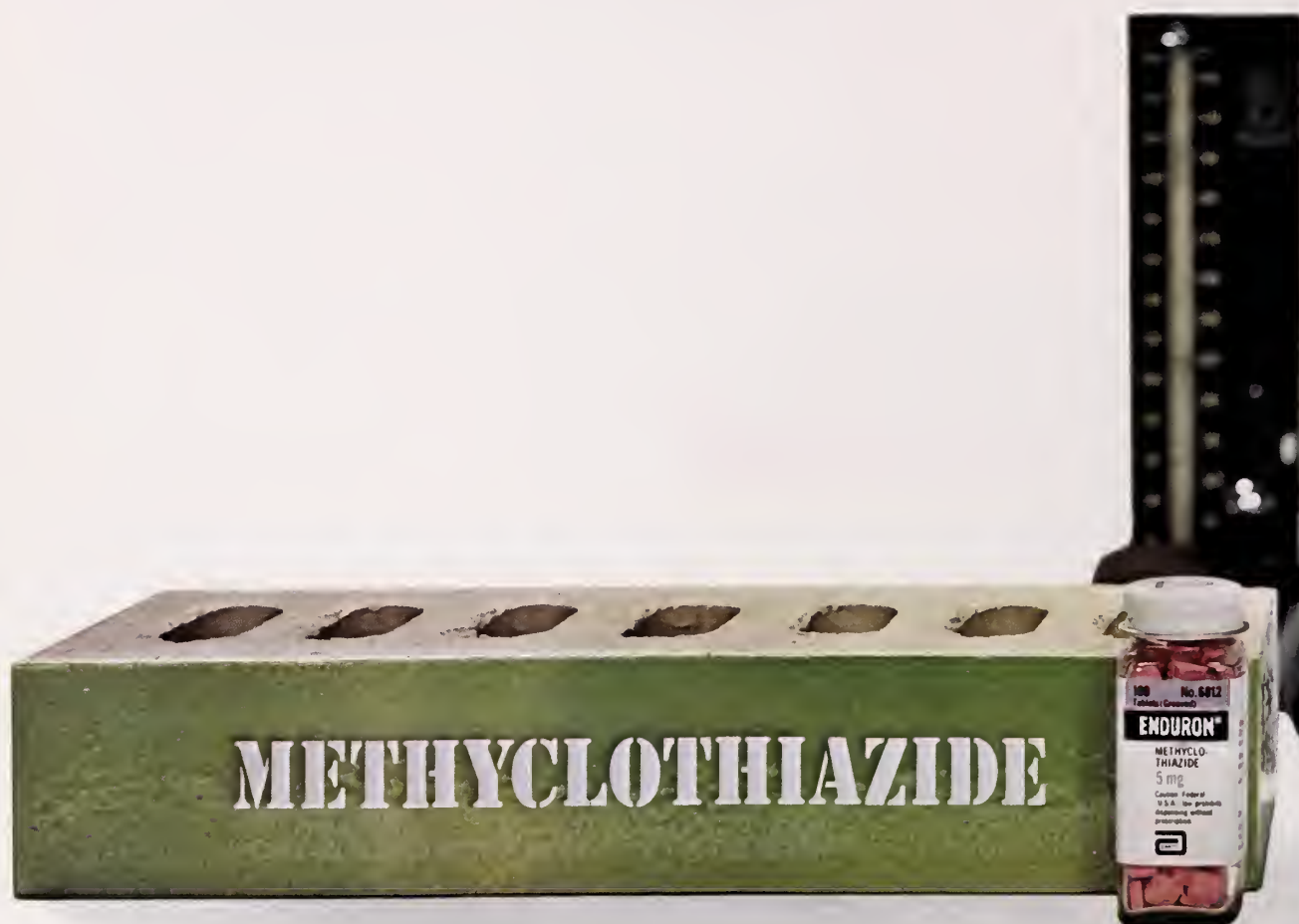
Chief, Epidemiology and Research Analysis Section, Foreign Quarantine Program, National Communicable Disease Center, Atlanta, Ga.

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A simplified approach
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Enduron: (methyclothiazide) A basic building block for mild hypertensives



Excellent day-long Na^+ output, yet easy on the K^+

Enduron provides an excellent starting therapy. Your patient's sodium excretion is greatly enhanced. Yet potassium loss is low.

The therapeutic action is smooth, and persists for a full 24 hours. With Enduron you can prescribe convenient once-a-day dosage without skimping your patients on day-long thiazide effectiveness.

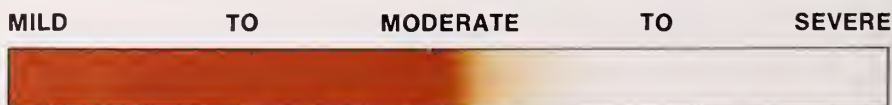
Of course, as with all thiazides, supplemental dietary potassium should also be considered.

Use Enduron as a basic therapy in patients with mild to moderate hypertension. A single 5-mg. tablet each day is ample in most cases.

Once a day, every day

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Enduronyl: Its deserpidine component adds response in moderate hypertension



Less frequent rauwolfia side effects than with reserpine

When you wish to build further response, consider shifting to Enduronyl.

Enduronyl adds a building block of *deserpidine*. This is a purified rauwolfia alkaloid available only from Abbott. It adds good antihypertensive and tranquilizing activity. Yet its incidence of untoward effects, particularly lethargy and depression, is lower than with reserpine.

Enduronyl is available plain or Forte. The latter provides its variation where most helpful, by doubling the deserpidine.

Use Enduronyl for patients throughout the broad range of mild to moderately severe hypertension.

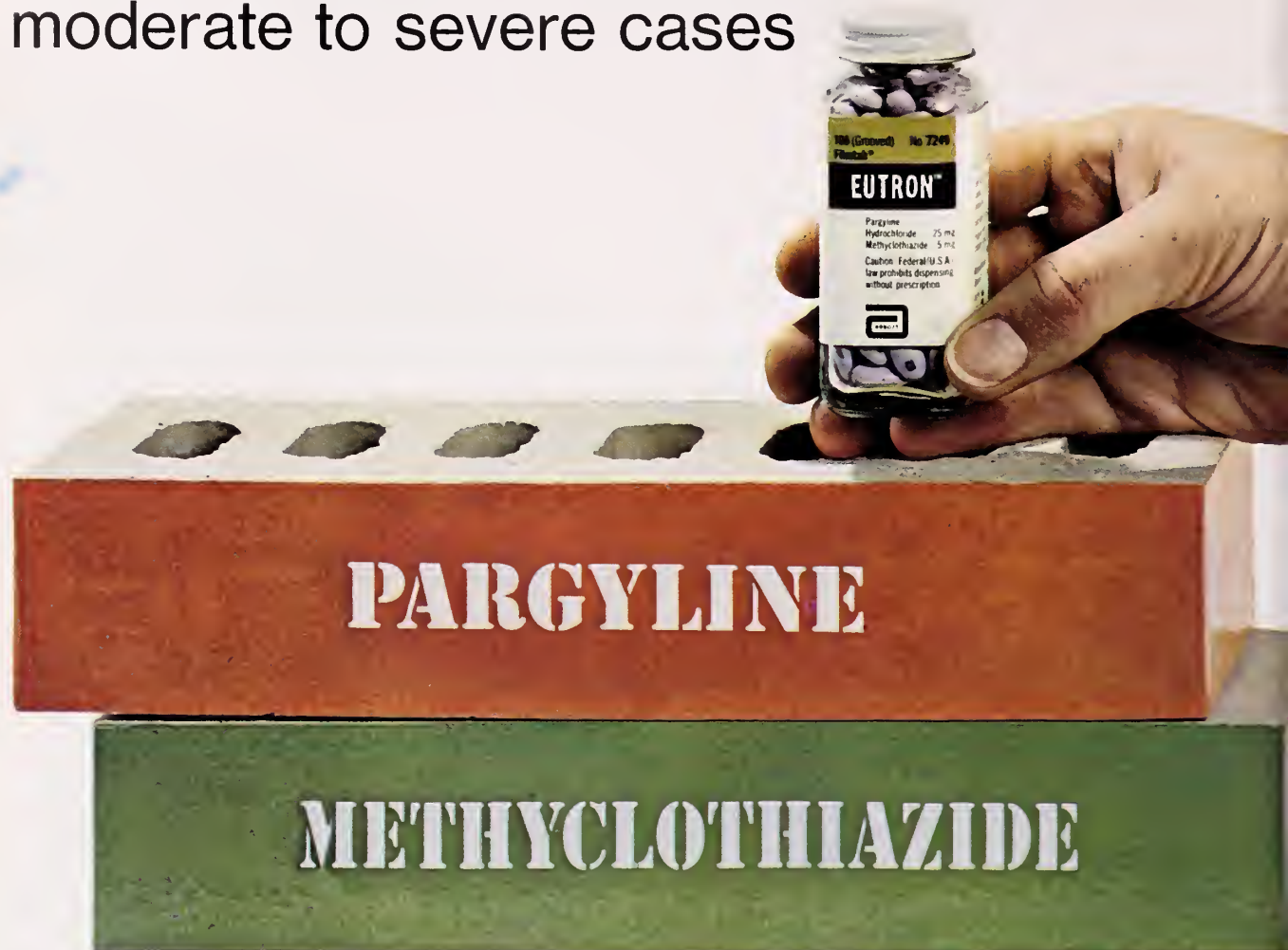
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ENDURONYL[®]

METHYLOTHIAZIDE 5 mg. with
DESERPIDINE 0.25 mg. or (FORTE) 0.5 mg.



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Eutron: A unique combination for handling moderate to severe cases



Affords almost uniform diastolic reduction in all body positions

Eutron lowers diastolic pressures nearly equally, whether your patient is standing up or lying down.

Thus, in clinical trials, average *standing* diastolic readings were reduced from 112 pre-treatment to 90 post-treatment; *sitting* from 115 to 95; and *recumbent* from 112 to 94.

Note that following Eutron, the diastolic reductions were nearly alike in all three body positions.

Use Eutron for managing your moderate to severe cases. Its building blocks enhance each other; hence lesser doses often suffice.

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PARGYLINE HYDROCHLORIDE 25 mg.
with METHYCLOTHIAZIDE 5 mg.



See Brief Summary on final page of advertisement

ENDURON[®] ENDURONYL[®]

METHYLCLOTHIAZIDE

Each tablet contains
Methylothiazide 5 mg. with
Deserpidine 0.25 mg. or 0.5 mg.

Indications: Edema and mild to moderate hypertension (Enduron), and mild to moderately severe hypertension (Enduronyl). More potent agents, if added, can be given at reduced dosage.

Contraindications: Sensitivity to thiazides; severe renal disease (except nephrosis) or shutdown; severe hepatic disease or impending hepatic coma (hepatic coma due to hypokalemia has been reported in patients on thiazides). Do not use Enduronyl in severe mental depression, suicidal tendencies, active peptic ulcer, or ulcerative colitis.

Warnings: Consider possible sensitivity where there is history of allergy or asthma. If added potassium is indicated, dietary supplementation is recommended. Reserve enteric-coated potassium tablets for cautious use only when necessary, as they may induce serious or fatal small bowel lesions (stenosis with or without ulceration), cause obstruction, hemorrhage, and perforation often requiring surgery; discontinue them immediately if abdominal pain, distention, nausea, vomiting, or g.i. bleeding occurs. Neither Enduron nor Enduronyl contains added potassium.

Precautions: Use thiazides cautiously in severe renal dysfunction, impaired hepatic function or progressive liver disease; also in pregnancy (bone marrow depression, thrombocytopenia, and altered carbohydrate metabolism have been reported in certain newborn). In surgery, thiazides may reduce response to vasopressors, and increase response to tubocurarine. Antihypertensive response may be enhanced following sympathectomy. Watch for electrolyte imbalance (e.g., hyponatremia) in all patients. In hypokalemia (especially in digitalized patients) give supplemental potassium. In hypochloremic alkalosis, give supplemental chloride.

Use rauwolfias with caution in patients with history of peptic ulcer. Rauwolfias with anesthetics may produce hypotension and bradycardia. Discontinue Enduronyl two weeks before elective surgery. Consider vagal blocking agents during emergency surgery. In epilepsy, adjust anticonvulsant dosage. In electroshock, shorten stimulus strength and duration. In occasional patients with depressive tendencies, rauwolfias may precipitate severe mental depression that usually disappears when drug is stopped.

Adverse Reactions: Thiazide reaction include blood dyscrasias (thrombocytopenia with purpura, agranulocytosis, aplastic anemia); elevation of BUN, serum uric acid or blood sugar; anorexia, nausea, vomiting, diarrhea, headache, dizziness, paresthesia, weakness, skin rash, photosensitivity, jaundice, symptomatic gout, and pancreatitis. Cutaneous vasculitis in the elderly has been reported with other thiazides. Adverse effects with deserpidine are qualitatively similar to those with reserpine, but their incidence is lower. These include nasal stuffiness, abdominal cramps or diarrhea, nausea, headache, weight gain, reduced libido and potency, peptic ulcer aggravation, epistaxis, skin eruption, asthma in susceptible patients, electrolyte imbalance, excessive salivation, and a reversible Parkinson's syndrome. Excessive drowsiness, fatigue, weakness, and nightmares may signal mental depression. Thrombocytopenia, purpura, and a symptom manifested by dull sensorium, deafness, uveitis, glaucoma, and optic atrophy are rare allergic reactions to other rauwolfias. Hypotension from antihypertensive agents may precipitate angina attacks in susceptible individuals. Usually adverse reactions disappear when drug is withdrawn.

EUTRON[™]

Each tablet contains
Pargyline Hydrochloride 25 mg.
with Methylothiazide 5 mg.

Indications—Moderate to severe hypertension.

Contraindications—Phaeochromocytoma, paranoid schizophrenia, hyperthyroidism and advanced renal failure. Not recommended in malignant hypertension, children under 12, pregnant patients.

Do not use with: centrally or peripherally acting sympathomimetic drugs; foods high in tyramine (e.g., aged and natural cheeses); parenteral reserpine or guanethidine; imipramine, amitriptyline, desipramine, nortriptyline or their analogues; other monoamine oxidase inhib-

itors; methyl dopa or dopamine; separate Eutron and these agents by two weeks.

Sensitivity to thiazides; severe renal disease (except nephrosis) or shutdown; severe hepatic disease; impending hepatic coma from thiazide-induced hypokalemia.

Warnings—Patients: 1. No other drugs (particularly "cold preparations" and antihistamines), cheese or alcohol without physician's consent. 2. Promptly report orthostatic symptoms, severe headache, other unusual symptoms. 3. Angina pectoris or coronary artery disease patients must not increase physical activity with improved anginal symptoms or well-being.

Physicians: 1. Use antihistamines, hypnotics, sedatives, tranquilizers and narcotics (meperidine contraindicated) cautiously in reduced doses. 2. Stop Eutron two or more weeks before elective surgery; in emergency surgery reduce premedication (narcotics, sedatives, analgesics, etc.) to 1/4 to 1/5; carefully adjust anesthetic dosage to patient response. 3. Use cautiously in advanced renal failure. 4. Pargyline may induce hypoglycemia. 5. Consider possible sensitivity reactions when a history of allergy or asthma is present. 6. If potassium is indicated, dietary supplement is recommended; enteric-coated potassium tablets may induce serious or fatal small bowel lesions (stenosis with or without ulceration), cause obstruction, hemorrhage, and perforation frequently requiring surgery; discontinue medication immediately if abdominal pain, distention, nausea, vomiting or gastrointestinal bleeding occurs; Eutron does not contain added potassium. 7. Possible systemic lupus erythematosus has been reported for thiazides.

Precautions—Pargyline: Use cautiously at reduced dosage: caffeine, alcohol, antihistamines, barbiturates, chloral hydrate, other hypnotics, sedatives, tranquilizers, narcotics. Periodically do urinalyses, blood counts, liver function tests, etc. Use with caution in liver disease. Watch for orthostatic hypotension, especially in impaired circulation (e.g., angina pectoris, coronary artery disease, cerebral arteriosclerosis); also, augmented hypotension in concomitant febrile illnesses. Reduce or discontinue if hypotension is severe. In impaired renal function watch for cumulative drug effects, elevated BUN and other evidence of progressive renal failure; withdraw drug if these persist. In surgery increased central depressant response (hypotension and increased sedative effect) can be controlled by (1) discontinuing at least two weeks prior; (2) in emergency surgery lowering dose of premedication; (3) when necessary, administering a vasopressor. Do not use in hyperactive and hyperexcitable patients. Pargyline may unmask severe psychotic symptoms where emotional problems pre-exist. Use cautiously in Parkinsonism, especially with antiparkinsonian agents. In prolonged therapy, examine for change in color perception, visual fields, fundi and visual acuity. Also, prolonged therapy has made certain patients refractory to nerve blocking effects of local anesthetics.

Methylothiazide: Use cautiously in severe renal dysfunction, impaired hepatic function or progressive liver disease; also in pregnancy (bone marrow depression, thrombocytopenia, and altered carbohydrate metabolism have been reported in certain newborn). In surgery thiazide may reduce vasopressor response and increase tubocurarine response. Antihypertensive response may be enhanced following sympathectomy. Watch for electrolyte imbalance (e.g., hyponatremia). Give supplemental chloride if hypochloremic alkalosis occurs and supplemental potassium if hypokalemia occurs (especially in digitalized patients). Thiazides may decrease serum P.B.I. without signs of thyroid disturbance.

Adverse Reactions —Pargyline: Orthostatic hypotension and associated symptoms, mild constipation, fluid retention, edema, dry mouth, sweating, increased appetite, arthralgia, nausea, vomiting, headache, insomnia, difficulty in micturition, nightmares, impotence, delayed ejaculation, rash, purpura, weight gain, hyperexcitability, increased neuromuscular activity and other extrapyramidal symptoms. Drug fever is extremely rare. Reduction in blood sugar and hypoglycemic effects are possible. Congestive heart failure has been reported in a few patients with reduced cardiac reserve.

Methylothiazide: Blood dyscrasias (thrombocytopenia with purpura, agranulocytosis, aplastic anemia); elevation of BUN, blood sugar or serum uric acid (gout may be induced); anorexia, nausea, vomiting, diarrhea, headache, dizziness, paresthesia, weakness, skin rash, photosensitivity, jaundice and pancreatitis. Cutaneous vasculitis in elderly patients has been reported with other thiazides.

If side effects are severe or persist, reduce dosage or withdraw drug.



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**If it doesn't work in a week,
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Contraindications: Edema; danger of cardiac decompensation; history or symptoms of peptic ulcer; renal, hepatic or cardiac damage; history of drug allergy; history of blood dyscrasia. The drug should not be given when the patient is senile or when other potent drugs are given concurrently. Large doses of Butazolidin alka are contraindicated in glaucoma.

Warning: If coumarin-type anticoagulants are given simultaneously, watch for excessive increase in prothrombin time. Instances of severe bleeding have occurred. Persistent or severe dyspepsia may indicate peptic ulcer; perform upper gastrointestinal x-ray diagnostic tests if drug is continued. Pyrazole compounds may potentiate the pharmacologic action of sulfonyleurea, sulfonamide-type agents and insulin. Carefully observe patients receiving such therapy. Use with caution in the first trimester of pregnancy and in patients with thyroid disease.

Precautions: Before prescribing, carefully select patients, avoiding those responsive to routine measures as well as contraindicated patients. Obtain a detailed history and a complete physical and laboratory examination, including a blood count. The patient should not exceed recommended dosage, should be closely supervised and should be warned to discontinue the drug and report immediately if fever, sore throat, or mouth lesions (symptoms of blood dyscrasia); sudden weight gain (water retention); skin reactions; black or tarry stools or other evidence of intestinal hemorrhage occur. Make complete blood counts at weekly intervals during early therapy and at 2-week intervals thereafter. Discontinue the drug immediately and institute countermeasures if the white count changes significantly, granulocytes decrease, or immature forms appear. Use greater care in the elderly and in hypertensives.

Adverse Reactions: The more common are nausea and edema. Swelling of the ankles or face may be minimized by withholding dietary salt, reduction in dosage or use of diuretics. In elderly patients and in those with hypertension the drug should be discontinued with the appearance of edema. The drug has been associated with peptic ulcer and may reac-

tivate a latent peptic ulcer. The patient should be instructed to take doses immediately before or after meals or with milk to minimize gastric upset. Drug rash occasionally occurs. If it does, promptly discontinue the drug. Agranulocytosis, exfoliative dermatitis, Stevens-Johnson syndrome, Lyell's syndrome (toxic necrotizing epidermolysis), or a generalized allergic reaction similar to serum sickness may occur and require permanent withdrawal of medication. Agranulocytosis can occur suddenly in spite of regular, repeated normal white counts. Stomatitis, salivary gland enlargement, vomiting, vertigo and languor may occur. Leukemia and leukemoid reactions have been reported. While not definitely attributable to the drug, a causal relationship cannot be excluded. Thrombocytopenic purpura and aplastic anemia may occur. Confusional states, agitation, headache, blurred vision, optic neuritis and transient hearing loss have been reported, as have hyperglycemia, hepatitis, jaundice, hypersensitivity angitis, pericarditis and several cases of anuria and hematuria. With long-term use, reversible thyroid hyperplasia may occur infrequently. Moderate lowering of the red cell count due to hemodilution may occur.



Dosage in Rheumatoid Arthritis: Initial: 3 to 6 capsules daily in 3 or 4 equal doses. Trial period: 1 week. Maintenance dosage should not exceed 4 capsules daily; response is often achieved with 1 or 2 capsules daily.

In selecting appropriate dosage in any specific case, consideration should be given to the patient's weight, general health, age and any other factors influencing drug response. (B)46-070-A

Butazolidin® alka Geigy

Capsules

phenylbutazone, 100 mg.; dried aluminum hydroxide gel, 100 mg.; magnesium trisilicate, 150 mg.; homatropine methylbromide, 1.25 mg.



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The muscle relaxant that works before you write a prescription

Relieve painful skeletal muscle spasm in your office in minutes with a single 2 cc. injection of NORFLEX. Then, for sustained relief, write a prescription for NORFLEX tablets, 1 tablet b.i.d.

CONTRAINDICATIONS: Due to its anticholinergic action, NORFLEX should not be used in patients with glaucoma, pyloric or duodenal obstruction, stenosing peptic ulcer, prostatic hypertrophy or obstruction at the bladder neck, cardiospasm (megaesophagus) and myasthenia gravis. Use with caution in patients with tachycardia. Do not use propoxyphene (Darvon®) concurrently.

WARNING: Transient lightheadedness or dizziness following NORFLEX-INJECTABLE may occur.

SIDE EFFECTS: Due mainly to anticholinergic action and usually at high dosage. They may include dryness of the mouth, tachycardia, palpitation, urinary hesitancy or retention, blurred vision, dilatation of the pupil, increased ocular tension, weakness, nausea, vomiting, headache, dizziness, constipation, and drowsiness. Infrequently, mental confusion in the elderly, urticaria or other dermatoses. Side effects are usually eliminated by reduction in dosage. Two cases of aplastic anemia, with no established causal relationship, have been reported.

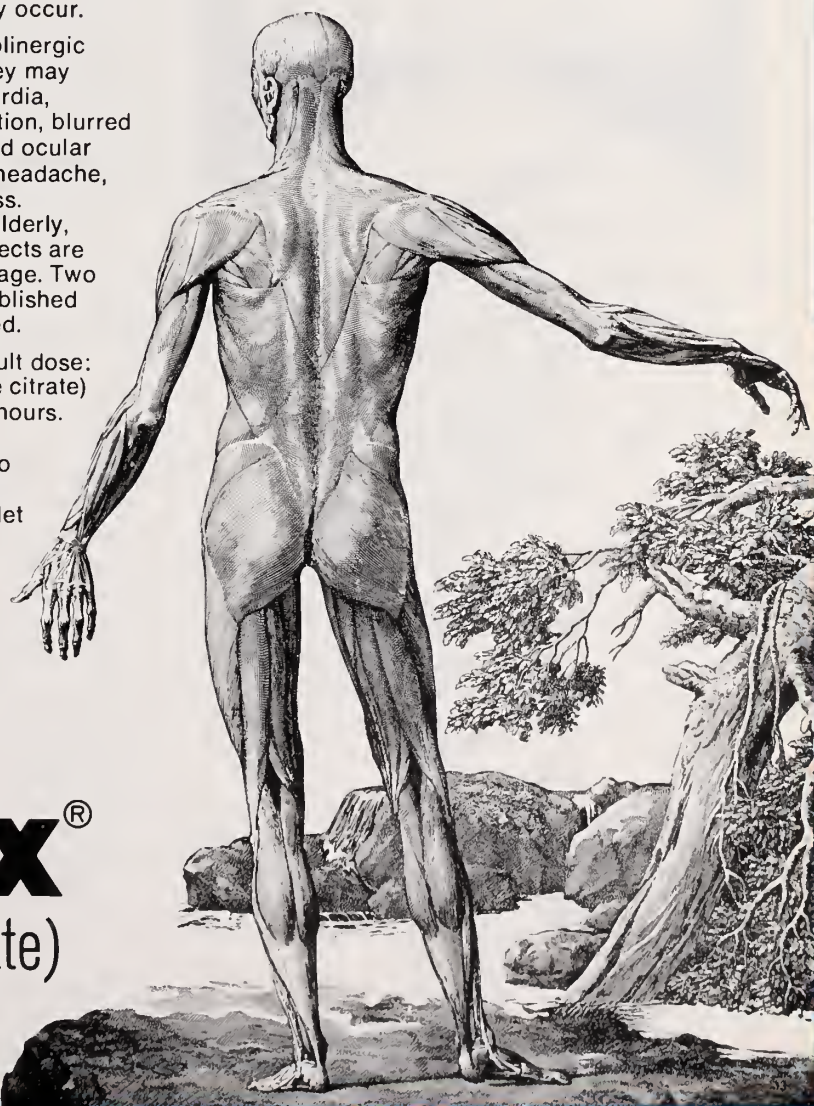
DOSAGE: INJECTABLE — Average adult dose: one ampul, 2 cc. (60 mg. orphenadrine citrate) I.M. or I.V. May be repeated every 12 hours. Relief may be maintained with one NORFLEX tablet b.i.d. **TABLETS** — Two tablets per day for adults, one in the morning, one in the evening. Each tablet contains 100 mg. orphenadrine citrate.

For full information, see Package Insert or P.D.R.

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Synirin provides prompt barbiturate potentiation of aspirin without limiting the therapeutic usage of aspirin. Both pentobarbital and aspirin begin their action together promptly and last 4 or 5 hours. There is no accumulation.

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Proceedings of the Eighth National Conference on Medical Aspects of Sports, held November 27, 1966, in Las Vegas, Nevada. This meeting discussed such topics as fitness and the adult athlete, medical aspects of weight control, problems in winter sports, and the medical society's committee on sports. Price, \$2.00.

1967 Reviews of Medical Motion Pictures. Briefly describes and evaluates nearly 40 films for professional audiences and 17 directed to the laity. Free copy available from AMA Department of Postgraduate Programs, Medical Motion Picture and TV Section.

HEW Publications

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Emphysema, the Battle to Breathe (PHS Publ. No. 1715). National Center for Chronic Disease Control. Reprint of an award-winning 5-part series by Frank E. Carey, Associated Press Science Writer, which generated strong public interest in the problems of chronic lung disease. Price, 35 cents.

A Guide to Reading on Fluoridation, Annotated (PHS Publ. No. 1680). PHS Division of Dental Health. Source book on fluoridation of public water supplies for use by the general public. Annotated bibliography lists over 60 titles. 11 pp. Price, 15 cents. Free copy available from Division of Dental Health (PHS), 8120 Woodmont Avenue, Bethesda, Md. 20014.

Minimum Sanitary Standards for Community Infant Formula Services (PHS Publ. No. 1625). Free copy available from National Center for Urban and Industrial Health Environmental Sanitation Program, 222 East Central Parkway, Cincinnati, Ohio 45202.

Poison Ivy, Oak, and Sumac (PHS Publ. No. 1732). National Institute of Allergy and Infectious Diseases. Pointers on how to recognize, avoid, and eliminate the plants. Price, 5 cents.

Promoting the Group Practice of Medicine (PHS Publ. No. 1750). Report of the National Conference on Group Practice, October 19-21, 1967, held at the Center for Continuing Education, University of Chicago, Chicago, Ill. 70 pp. Price, 30 cents.

Regional Medical Programs for Heart Disease, Cancer, Stroke, and Related Diseases: Progress Report. Sections on the history, purposes, nature and potentials of Regional Medical Programs, and a directory of Regional Medical Programs. All funded planning and operational programs, including key staff and related information, as of February 29, 1968. 16 pp. Available from Publications Service, Office of Communications and Public Information, Division of Regional Medical Programs, National Institutes of Health, Bethesda, Md. 20014.

Synthetic State Estimates of Disability Derived from the National Health Survey (PHS Publ. No. 1759). National Center for Health Statistics. 16 pp. Price, 20 cents.

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August 9-11: International Doctors in Alcoholics Anonymous. Executive Park Motel, Atlanta, Ga. Address: Dr. Lewis K. Reed, Secretary-Treasurer, 1950 Volney Road, Youngstown, Ohio 44511.

August 11-15: National Medical Association. Shamrock-Hilton, Houston. Address: Mr. Samuel C. Smith, Administrative Secretary, 520 W Street, N.W., Washington, D. C. 20001.

August 25-31: International Congress of Physiological Sciences. Washington. Address: Secretariat, International Congress of Physiological Sciences, 9650 Rockville Pike, Bethesda, Md. 20014.

September 1-6: American Society of Hematology. Waldorf-Astoria, New York. Address: Dr. J. F. Mustard, Department of Pathology, McMaster University, Hamilton, Ontario.

September 5-7: American Association of Obstetricians and Gynecologists. The Homestead, Hot Springs, Va. Address: Dr. Robert B. Wilson, Executive Secretary, 200 First Street, S.W., Rochester, Minn. 55901.

September 13-20: American Academy of General Practice. Las Vegas, Nevada. Address: Mr. Mac F. Cahal, Executive Director, Volker Blvd. at Brookside, Kansas City, Mo. 64112.

September 15-20: International Congress on Alcohol and Alcoholism. Shoreham Hotel, Washington. Address: Secretariat Office, 1130 17th Street, N.W., Washington, D. C. 20036.

October 4-8: International Congress on Diseases of the Chest. Washington Hilton Hotel, Washington. Address: American College of Chest Physicians, 112 East Chestnut Street, Chicago, Ill. 60611.

October 14-18: American College of Surgeons. Dennis Hotel, Atlantic City, N. J. Address: Dr. John Paul North, 55 East Erie Street, Chicago, Ill. 60611.

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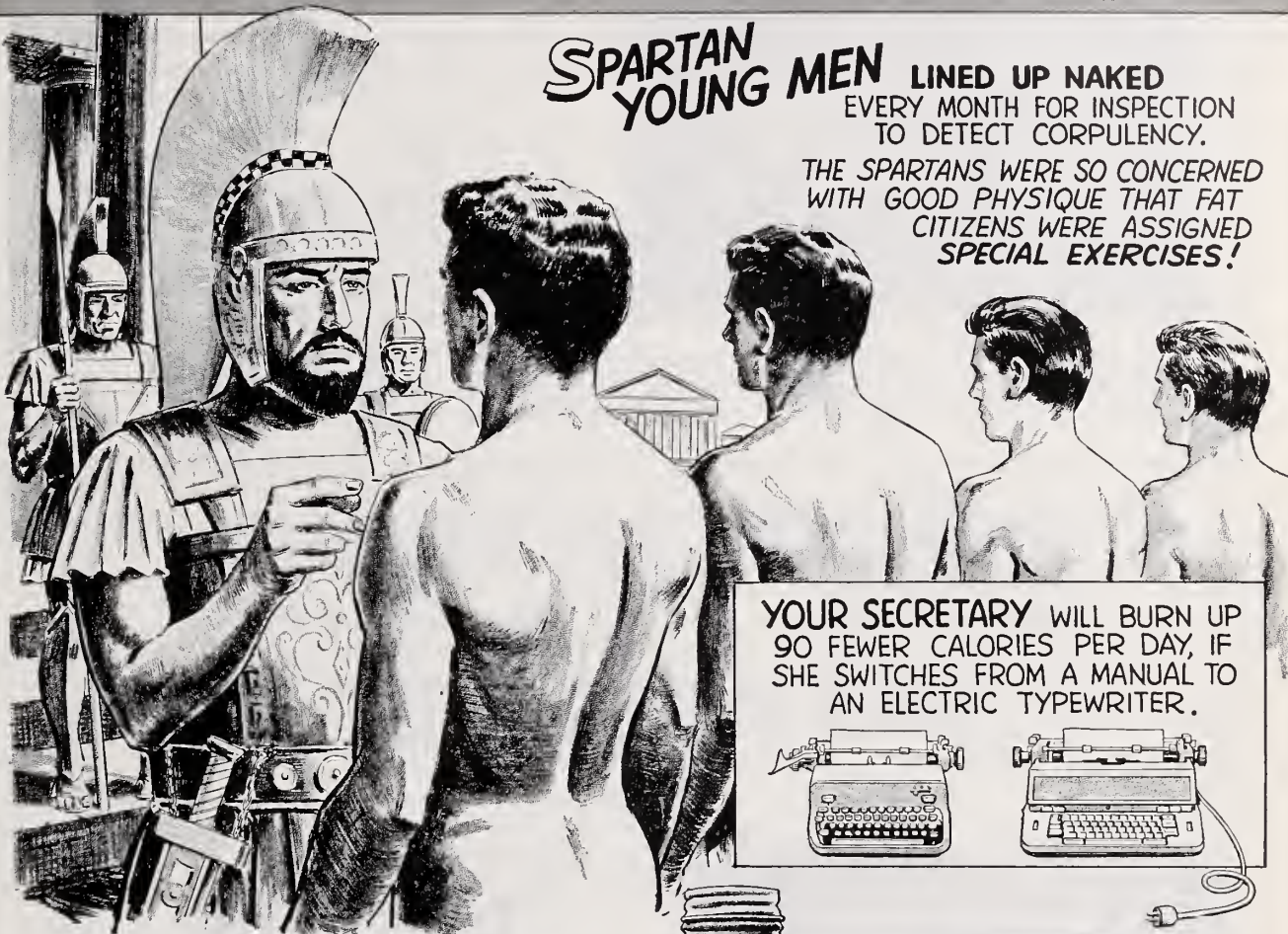
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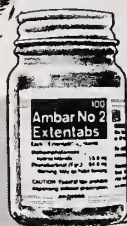
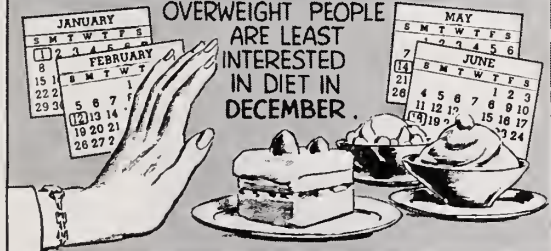


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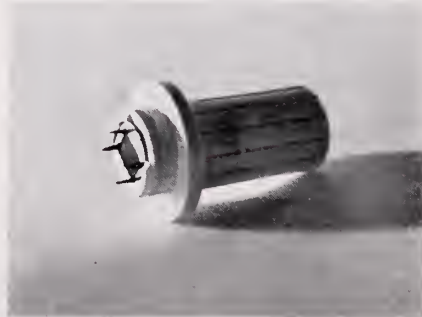
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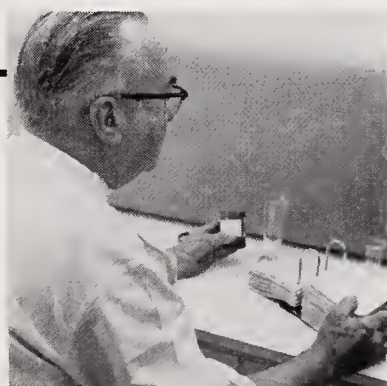
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Precautions: If combined with other psychotropics or anticonvulsants, carefully consider individual pharmacologic effects—particularly with known compounds which may potentiate action of Valium (diazepam), such as phenothiazines, narcotics, barbiturates, MAO inhibitors and other antidepressants. Employ usual precautions in the severely depressed or in those with latent depression; suicidal tendencies may be present and

protective measures necessary. Observe usual precautions in impaired renal or hepatic function. Limit dosage to smallest effective amount in elderly and debilitated to preclude ataxia or oversedation (initially 2 to 2½ mg once or twice daily, increasing gradually as needed or tolerated).

Adverse Reactions: Side effects most commonly reported: drowsiness, fatigue and ataxia. Infrequently encountered: confusion, constipation, depression, diplopia, dysarthria, headache, hypotension, incontinence, jaundice, changes in libido, nausea, changes in salivation, skin rash, slurred speech, tremor, urinary retention, vertigo and blurred vision. Paradoxical reactions such as acute hyperexcited states, anxiety, hallucinations, increased muscle spasticity, insomnia, rage, sleep disturbances and stimulation have been reported; should these occur, use of the drug should be discontinued. Because of isolated reports of neutropenia and jaundice, periodic blood counts and liver function tests are advisable during long-term therapy. Minor changes in EEG patterns (low-voltage fast activity) observed during and after therapy and are of no known significance.

Dosage: Individualize for maximum beneficial effect. *Adults:* Tension, anxiety and psychoneurotic states, 2 to 10 mg b.i.d. to q.i.d.; alcoholism, 10 mg t.i.d. or q.i.d. in first 24 hours, then 5 mg t.i.d. or q.i.d. as needed; adjunctively in skeletal muscle spasm, 2 to 10 mg t.i.d. or q.i.d.; adjunctively in convulsive disorders, 2 to 10 mg b.i.d. to q.i.d. *Geriatric or debilitated patients:* 2 to 2½ mg, 1 or 2 times daily initially, increasing as needed and tolerated. (See Precautions.) *Children:* 1 to 2½ mg t.i.d. or q.i.d. initially, increasing as needed and tolerated (not for use under 6 months).



Division of Hoffmann-La Roche Inc.
Nutley, New Jersey 07110

Roche®
LABORATORIES

Supplied: Valium® (diazepam) Tablets, 2 mg, 5 mg and 10 mg; bottles of 50, 100 and 500.

Valium® (diazepam)

*useful for the relief of psychic tension,
alone or with associated depressive symptoms*









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